

1
Ag 84M
cog. 3

DC BRANCH

**Hydrologic Data
for
Experimental Agricultural
Watersheds
in the United States
1967**

U. S. DEPT. OF AGRICULTURE
NATIONAL AGRICULTURAL LIBRARY
RECEIVED

NOV 16 1973

PROCUREMENT SECTION
CURRENT SERIAL RECORDS

Miscellaneous Publication No. 1262

Agricultural Research Service
U.S. DEPARTMENT OF AGRICULTURE
In Cooperation With
State Agricultural Experiment Stations

Historic, archived document

Do not assume content reflects current
scientific knowledge, policies, or practices.



**Hydrologic Data
for
Experimental Agricultural
Watersheds
in the United States
1967**

**Compiled by
JAMES B. BURFORD
and
JOHN M. CLARK
Hydrologic Data Laboratory, Northeastern Region**

Miscellaneous Publication No. 1262

**Agricultural Research Service
U.S. DEPARTMENT OF AGRICULTURE
In Cooperation With
State Agricultural Experiment Stations**

Washington, D.C.

Issued July 1974



PREFACE

This publication presents annual basic data on monthly precipitation and runoff; long-term monthly precipitation means for the locality; annual maximum discharges and volumes of runoff; daily air temperature, precipitation, and discharge (for some areas); and selected runoff events, with associated data on rainfall, land use, and antecedent conditions for agricultural watersheds where research was in progress during 1967. It is a continuation of processing and releasing hydrologic data of general interest collected cooperatively with other agencies.

Throughout the watershed studies the State agricultural experiment stations have collaborated in selecting, planning, and conducting these studies. In several studies, the U.S. Geological Survey and State and local agencies, such as State water boards and highway departments of local drainage and conservation districts, have assisted in the work. The classification and correlation of soils and evaluation of other watershed charac-

teristics in the descriptions have been based mostly on field surveys by the U.S. Soil Conservation Service.

These data were collected originally for specific research objectives, which are still in progress or have been attained. In addition, they can serve many other purposes. This publication provides information for other government agencies, university staff members, graduate students, private engineers, and others who need detailed, factual information concerning agricultural watersheds. High-quality hydrologic data such as these have historic value in addition to providing a basis for research and design and evaluation of projects and programs for conservation and development of the Nation's water resources.

Although the data on which this publication is based were collected in 1967, the findings are still valid and are used for further research on agricultural watersheds.

CONTENTS

	Page
Publications of earlier data.....	1
Form of data presentation.....	3
Continuing watersheds.....	3
New watersheds.....	4
Watershed descriptions.....	4
Standard symbols for tabular data.....	7
Revisions of previously published data.....	7
Personnel responsible for compilations.....	8
Additional publications by location.....	8
United States index map and related data.....	11
Location of experimental agricultural watersheds of the Agricultural Research Service (1967) by land resource regions and major land resource areas of the United States.....	12
Legend for land resource regions and major land resource areas (of the 48 conterminous States).....	13
Table 1.—Experimental agricultural watersheds, by States, localities, and locations, under study during 1967 and included in this publication.....	14
Table 2.—Watersheds, by States, where observations were discontinued during 1966.....	14
Table 3.—Additions or revisions, by States, regarding data published before 1967.....	15
Watershed data by location number and decimal paging [8.1-1 to 75.4-3, a total of 617 data sheets].....	17

The decimal system of paging is used to index the watershed data. Pages are numbered at the bottom according to location and watershed number, and the data for each watershed are given on one or more pages. For example, pages 8.2-2 is location 8 (Vero Beach, Fla.), watershed 2 (W-2 at Vero Beach), and page 2 of the data for that watershed.

For convenience in finding items in tables 2 and 3 in the "Contents" above, pages are also numbered consecutively at the top.

Table 1 is a list of continuing or new watersheds by State, locality, land resource area, assigned location number, watershed units, and number of selected runoff events reported for 1967 in this publication. Table 2 includes similar data on discontinued watersheds. Table 3 contains additions or revisions regarding watershed data.

Hydrologic Data for Experimental Agricultural Watersheds in the United States, 1967

This publication contains selected hydrologic data for 1967, including monthly precipitation and runoff summaries for 216 watersheds; annual maximum discharges and annual maximum volumes of runoff for 204 watersheds for intervals of 1, 2, 6, and 12 hours and 1, 2, and 8 days; daily precipitation and discharge or daily air temperature or both for 164 watersheds; and detailed information for one or more selected typical storm events for 174 watersheds. The decimal paging system used (see explanation on p. iv) is consistent with that at the bottom of pages in the nine previous publications (see next section), so that previously published records and general descriptions can be readily found and consulted.

Information on selected storm events includes (1) tabular data for the 30-day antecedent rainfall and runoff before the events; (2) data on rainfall intensities and runoff for the event and on accumulated depth of rainfall and runoff; (3) description of watershed conditions at the time of the selected events; (4) plottings of runoff hydrographs and rainfall histograms; (5) watershed maps; and (6) for some of the larger drainage areas, isohyetal maps of storm rainfall distribution.

For newly established watersheds, descriptions of watershed physical characteristics, instrumentation, graphs, maps, land management, and recommended area of application of the results are also given. Original descriptions of characteristics have been revised or updated for several watersheds and additions are listed in table 3, with details given on the respective data sheets for each watershed.

PUBLICATIONS OF EARLIER DATA

Hydrologic data for past years on many of the currently operating experimental agricultural watersheds have been previously summarized in three looseleaf publications (reprints in bound volumes) by the Agricultural Research Service of the U.S. Department of Agriculture, Beltsville,

Md. 20705. These reports, listed as references 1, 2, and 3, are described in the following summary. Beginning with the hydrologic data for 1956 through 1966, the types of data previously published separately in these three references were combined in U.S. Department of Agriculture Miscellaneous Publications 945, 994, 1070, 1164, 1194, 1216, and 1226. These are listed below as references 4, 5, 6, 7, 8, 9, and 10. All 10 publications have been assigned these reference numbers to simplify citations to them in this and future publications.

Reference 1.—MONTHLY PRECIPITATION AND RUNOFF FOR SMALL AGRICULTURAL WATERSHEDS IN THE UNITED STATES. Soil and Water Conservation Research Branch, 691 pages, 1957. (Includes physical descriptions and land use of 334 experimental agricultural watersheds at 60 locations in 27 States from 1923 through 1957. Many of these watersheds were discontinued before 1955.)

Reference 2.—ANNUAL MAXIMUM FLOWS FROM SMALL AGRICULTURAL WATERSHEDS IN THE UNITED STATES. Soil and Water Conservation Research Division, 330 pages, 1958. (Includes records from 322 watersheds at 59 locations in 27 States from 1923 through 1957. Many of these watersheds were discontinued before 1957.)

Reference 3.—SELECTED RUNOFF EVENTS FOR SMALL AGRICULTURAL WATERSHEDS IN THE UNITED STATES. Soil and Water Conservation Research Division, 374 pages, 1960. (Includes a sampling of one to six typical runoff events from 68 watersheds at 40 locations in 25 States from 1933 through 1959. The publication has maps of each watershed, watershed conditions for each event—including the 30-day antecedent rainfall and runoff—and tabular as well as graphic data on each storm.)

Reference 4.—HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956–59. Harold W. Hobbs, Soil and Water Conservation Research Division, Agricultural Research Service, U.S. Department of Agriculture Miscellaneous Publication 945, 672 pages, 1963. (Contains monthly precipitation and runoff from

157 watersheds, including 45 newly established watersheds for which data had not been previously published; annual maximum discharges and annual maximum volumes for 1 hour to 8 days for 142 watersheds; and one or more typical selected runoff events for 134 watersheds. The publication has watershed maps, when new or revised, and graphs of each selected event, together with tabular data. Locations of experimental studies are shown on a U.S. fold-in map of land resource areas in 48 States.)

Reference 5.—HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61. Harold W. Hobbs and Florence B. Crammatte, Soil and Water Conservation Research Division, Agricultural Research Service, U.S. Department of Agriculture Miscellaneous Publication 994, 496 pages, 1965. (Contains monthly precipitation and runoff from 160 watersheds, including 24 newly established watersheds for which data had not been previously published; annual maximum discharges and annual maximum volumes for 1 hour to 8 days for 145 watersheds; and one or more typical selected runoff events for 133 watersheds. The publication has watershed maps, either new or revised, and graphs of each selected event, together with corresponding tabular data. Selected runoff events published through 1961 for each watershed are listed in table 4.)

Reference 6.—HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1962. Harold W. Hobbs, Soil and Water Conservation Research Division, Agricultural Research Service, U.S. Department of Agriculture Miscellaneous Publication 1070, 447 pages, 1968. (Contains monthly precipitation and runoff from 164 watersheds, including 13 watersheds for which data had not been previously published; annual maximum discharges and annual maximum volumes for 1 hour to 8 days for 155 watersheds; and one or more typical selected runoff events presented in both tabular and graphic form for 136 watersheds. Selected runoff events published through 1962 for each watershed are listed in table 4. Several watershed maps, either new or revised, are included.)

Reference 7.—HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1963. Harold W. Hobbs and J. B. Burford, Soil and Water Conservation Research Division, Agricultural Research Service, U.S. Department of Agriculture Miscellaneous Publication 1164,

465 pages, 1970. (Contains monthly precipitation and runoff from 168 watersheds, including nine watersheds for which data had not been previously published; annual maximum discharges and annual maximum volumes for 1 hour to 8 days for 156 watersheds; and one or more typical selected runoff events presented in both tabular and graphic form for 142 watersheds. Selected runoff events published through 1963 for each watershed are summarized in table 4. Several watershed maps, either new or revised, are included.)

Reference 8.—HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1964. J. B. Burford, Soil and Water Conservation Research Division, Agricultural Research Service, U.S. Department of Agriculture Miscellaneous Publication 1194, 460 pages, 1971. (Contains monthly precipitation and runoff from 163 watersheds, including eight watersheds for which data had not been previously published; annual maximum discharges and annual maximum volumes for 1 hour to 8 days for 163 watersheds; and one or more typical selected runoff events presented in both tabular and graphic form for 143 watersheds. Several watershed maps, either new or revised, are included.)

Reference 9.—HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1965. J. B. Burford, Soil and Water Conservation Research Division, Agricultural Research Service, U.S. Department of Agriculture Miscellaneous Publication 1216, 568 pages, 1972. (Contains monthly precipitation and runoff from 189 watersheds, including 22 watersheds for which data had not been previously published; annual maximum discharges and annual maximum volumes for 1 hour to 8 days for 178 watersheds; and one or more typical selected runoff events presented in both tabular and graphic form for 122 watersheds. Several watershed maps, either new or revised, are included.)

Reference 10.—HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1966. J. B. Burford, Soil and Water Conservation Research Division, Agricultural Research Service, U.S. Department of Agriculture Miscellaneous Publication 1226, 399 pages, 1972. (Contains monthly precipitation and runoff from 198 watersheds, including 11 watersheds for which data had not been previously published; annual maximum discharges and annual maximum volumes for 1 hour to 8 days for 185 watersheds; and

one or more typical selected runoff events presented in both tabular and graphic form for 106 watersheds. Several watershed maps, either new or revised, are included.)

Copies of these 10 publications have been furnished to the Soil Conservation Service and to other government agencies—Federal, State, and local. They have also been distributed to State agricultural experiment stations, university libraries and engineering departments, and, when requested, to private engineers and individuals. Distribution has also been made to similar foreign institutions and individuals.

FORM OF DATA PRESENTATION

The data in this publication are presented for each watershed in the following order: (1) Watershed description, if not previously published; (2) monthly precipitation and runoff; (3) average monthly precipitation and runoff for period of record; (4) local mean monthly precipitation (previously called normal P in publications through 1961 (ref. 5)); (5) annual maximum flows; (6) daily temperature extremes, daily precipitation, and discharge for some watersheds; (7) tabulations of data for selected runoff events; (8) graphs of selected runoff events; (9) watershed maps, if not previously published or if revised; and (10) isohyetal maps (if included) of storm rainfall distribution for selected runoff events.

Continuing Watersheds

For current watersheds, for which the descriptive information has been published in references 1, 4, 5, 6, 7, 8, 9, or 10, the tabular data begin at the top of the first page. Above the border at the center the page is numbered, and the decimal paging system is shown at the bottom.

In the space to the right of the first table title, MONTHLY PRECIPITATION AND RUNOFF (inches), the location *name*, watershed *number* (or designation), and watershed *size* are given. In the table for the current *calendar* year, the *precipitation* (P) in inches is listed in the monthly columns, with the yearly total given in the last column, headed *annual*. In the line below, the corresponding *runoff* (Q) in inches is similarly listed for each month and the total for the year. Underneath, in two lines, are given the (P) and (Q) station average amounts (STA AVG) by months, with aver-

age annual total for the period of record. On the bottom line of the table are given the long-term monthly and annual precipitation means (averages) for the nearest U.S. Weather Bureau Station.

In the second table, entitled ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS, data are also given for the *calendar* year listed in the first column. Under the *maximum discharge* heading, the date column shows the day and month that the instantaneous peak in inches per hour occurred. In computing this rate, corrections were made, where needed, for any significant pondage above the runoff-measuring device. Under the *maximum volume* heading, the date refers to the day and month on which the interval began; for example, if the interval began August 30 at 2359, the entry in the date column will be 8-30. The depths for 1 hour to 8 days are the annual maximum values recorded, without regard to entire clock hours or days; thus, if the 6-hour interval began at 1332, the interval would end exactly 6 hours later at 1932. The volume given is in inches of average depth over the watershed for each of the seven selected time intervals (1, 2, 6, and 12 hours, and 1, 2, and 8 days). In the last section of the table, the maximum discharges and depths for the various periods are given under MAXIMUMS FOR PERIOD OF RECORD.

Notes and footnotes in explanation of the data, given below the first two tables, include (1) a general statement as to watershed conditions and other physical changes for the period covered; (2) corrections or revisions for previously reported data; (3) source of long-term precipitation means or averages and years covered; and (4) other pertinent material or explanations of the hydrologic data in the two tables.

Before the 1963 volume, statements of the estimated quality of P and Q records were given in these notes. Beginning with the 1963 volume through this volume, with a few exceptions, no attempt has been made to evaluate the records; therefore, the statements under "Continuing Watersheds," on page 3 of the 1963 through 1966 volumes that indicate that quality statements are given only when records are considered to be less than excellent (less than 95 percent accurate) are in error and should be deleted. Reevaluations of previously published records are also included in these footnotes.

For some watersheds, tables of DAILY AIR TEMPERATURE (maximum and minimum in degrees Fahrenheit), DAILY PRECIPITATION (inches), and MEAN DAILY DISCHARGE (c.f.s) are next, with appropriate footnotes in explanation of the data at the end of each table. The multiplier to convert mean daily discharge in cubic feet per second to inches per day is given as the first note to the mean daily discharge table. The conversion factor for daily inches to acre-feet is sometimes included.

If no daily tables are given, the tabular data for SELECTED RUNOFF EVENTS begin in the remaining space on the first page and are carried forward on continuation sheets (or pages) until completed. In general, the SELECTED RUNOFF EVENTS were those in which runoff was produced by a relatively uniform rainfall excess of short duration. The information for each event includes tabulation of (1) *antecedent* daily rainfall and runoff for 30 days before the event, or reference made to daily tables if included; (2) rainfall *intensities* and *accumulated amounts* for the event; (3) runoff *rates* and *accumulated amounts* for the event; and (4) specific *watershed conditions* at the time of the event. Simple graphs of rainfall and runoff rates are shown for all events on pages following the tabular data.¹ Maps follow the graphs unless previously published in references 3 through 10 or unless shown herein on the map of another watershed. Isohyetal maps, if any, generally follow the regular maps.

In the "Notes" at the bottom of the first page for runoff events, the multiplier to convert runoff rates in inches per hour to cubic feet per second, or vice versa, is given, followed by references to maps, if required, and explanatory notes or footnotes relating to the tabular data. Below the bottom border and above the first index page number, the cooperating agencies are listed. The notes on continuation pages contain the statement on the multiplier and similar explanations of the data on each page.

New Watersheds

For the 26 watersheds installed in recent years and not reported previously, the presentation begins with the watershed description in the upper

part of the first page. The explanations and definitions on which the description is based are given in the next section.

The first line, centered at the top of the sheet, indicates the *project location*, which is the nearest city or town, and the number or name of the watershed used locally. The descriptive material is then given under the 12 major topics listed generally down the left side of the sheet: *Location, Area, Slopes, Soils, Erosion, Land Capability, Geology, Surface Drainage, Character of Flow, Instrumentation, Watershed Conditions, and Generally Represents*.

After this description, the tabular data are summarized in the first two tables and notes are included as previously described for "Continuing Watersheds." The tabular data for daily air temperatures, precipitation, and discharge, if presented, precede the tabular data for SELECTED RUNOFF EVENTS. The rest of the material of the series for the particular watershed follows in the same order as previously indicated.

WATERSHED DESCRIPTIONS

The following definitions and explanations were used in describing watershed location, watershed characteristics, instrumentation, land management, and recommended area of application of the hydrologic data.

LOCATION gives county and State, distance and direction of the runoff gaging station from the nearest city or town, and the major river basin in which it lies. When two or more basins are involved, the tributary or subbasin is mentioned first, followed by the major basin.

AREA of watershed is given in acres if less than 640 acres, and in both acres and square miles (in parentheses) if more than 1 square mile. If areas are revised, additional values are included with notes on date of change.

SLOPES are given in terms of the ranges commonly used in survey work in the locality. The percentages of the watershed lying in each slope class are listed. As an example, "8% is in 0-2% class" means that 8 percent of the watershed area has slopes ranging from 0 to 2 percent.

SOILS are described briefly, according to definitions from the U.S. Department of Agriculture SOIL SURVEY MANUAL, Agriculture Handbook 18, published in 1951. Soil descriptions are given for the 26 new watersheds.

¹ In some included events, noncritical points were eliminated from original tabulations to reduce the number of lines required in the tables for time, rates, and accumulations.

Soil texture refers to the relative proportions of the various size groups (or separates) of individual soil grains in a mass of soil. Specifically it refers to the proportions of clay, silt, and sand less than 2 mm. in diameter. The various classes of texture in order of increasing percentages of the smaller size groups are (1) sands, (2) loamy sands, (3) sandy loams, (4) loam, (5) silt loam, (6) silt, (7) sandy clay loam, (8) clay loam, (9) silty clay loam, (10) sandy clay, (11) silty clay, and (12) clay. In some of the descriptions the broader classification of coarse, moderately coarse, medium, moderately fine, and fine has been used—the coarse soils are the sands and the fine soils the clays.

Soil structure refers to the aggregation of primary soil particles into compound particles, or clusters of primary particles, that are separated from adjoining aggregates by surfaces of weakness. Structure *grade*, or the durability of the aggregates when subjected to disturbance, is described as *structureless*, *weak*, *moderate*, or *strong*. For some soils the structureless grade is described as *massive*, if coherent, or *single grain*, if non-coherent. The *size* of the aggregates is reported as *very fine*, *fine*, *medium*, *coarse*, or *very coarse*. Structure *shape* is given as being *platy*, *prismatic*, *columnar*, *angular blocky*, *subangular blocky*, *granular*, or *crumb*.

Permeability is the quality of a soil that enables it to transmit water or air. This quality is indicated by the terms *very slow*, *slow*, *moderately slow*, *moderate*, *moderately rapid*, *rapid*, or *very rapid*.

Internal soil drainage is the quality of a soil that permits the downward flow of excess water through it. Internal drainage is reflected in the frequency and duration of periods of saturation with water. It is determined by the texture, structure, and other characteristics of the soil profile and of underlying layers and by the height of the water table, either permanent or perched, in relation to the water added to the soil. *Internal drainage* is described as *none*, *very slow*, *slow*, *medium*, *rapid*, or *very rapid*.

EROSION conditions on the watershed are described in accordance with the following classification for water and wind erosion, also briefed from Agriculture Handbook 18. The percentages of the watershed in the following erosion classes are given.

Class 1.—The soil has a few rills or places with thin A horizons that give evidence of accelerated erosion, but not to an extent to alter greatly the thickness and character of the A horizon. Except for soils having very thin A horizons (less than 8 inches), the surface soil consists entirely of A horizon throughout nearly all the delineated areas. Up to about 25 percent of the original A horizon, or original plowed layer in soils with thin A horizons, has been removed from most of the area. This class also includes the areas with no erosion.

Class 2.—The soil has been eroded to the extent that ordinary tillage implements reach through the remaining A horizon or well below the depth of the original plowed layer in soils with thin A horizons. Generally the plowed layer consists of a mixture of the original A horizon and the underlying horizons. Mapped areas of eroded soil usually have patches in which the plowed layer consists entirely of the original A horizon, and others in which it consists entirely of underlying horizons. Shallow gullies may be present. Approximately 25 to 75 percent of the original A horizon or surface soil may have been lost from most of the area.

Class 3.—The soil has been eroded to the extent that all or practically all the original surface soil, or A horizon, has been removed. The plowed layer consists essentially of materials from the B or other underlying horizons. Patches in which the plowed layer is a mixture of the original A horizon and the B horizon, or other underlying horizons, may be included within mapped areas. Shallow gullies, or a few deep ones, are common in some soil types. More than about 75 percent of the original surface soil, or A horizon, and commonly part or all the B horizon, or other underlying horizons, have been lost from most of the area.

Class 4.—The land has been eroded until it has an intricate pattern of moderately deep or deep gullies. Soil profiles have been destroyed except in small areas between the gullies. Such land is not useful for crops in its present condition. Reclamation for crop production or for improved pasture is difficult, but may be practicable if other characteristics of the soil are favorable and erosion can be controlled.

Class +.—Recent alluvial and colluvial deposition.

LAND CAPABILITY is given as classified by Klingebiel and Montgomery in U.S. Department of Agriculture LAND-CAPABILITY CLASSIFICATION,

Agriculture Handbook 210, published in 1961. The classification expresses the suitability of land for use without deterioration. The eight land-capability classes are distinguished according to the risk of land damage or difficulty of land use. The following classes I through IV are suitable for cultivation and other uses, whereas classes V through VIII are not suitable for cultivation.

Class I.—Very good land for cultivation; nearly level and productive; not subject to erosion; needs only ordinary good farming methods.

Class II.—Good land for cultivation; mostly gently sloping; not more than moderately subject to erosion; some land may be rather wet; can be farmed safely with easily applied practices.

Class III.—Moderately good land for cultivation; mostly moderately sloping; some areas too wet or too dry; can be farmed safely with practical conservation measures, carefully applied; usually a combination of two or more measures is needed.

Class IV.—Fairly good land, suitable for occasional cultivation; generally strongly sloping; often shallow or very sandy; often found in dry climate.

Class V.—Land very well suited for grazing or forestry; requires good range or woodland management.

Class VI.—Land well suited for grazing or forestry; steeply sloping land, or stony or shallow soil; eroded, droughty, or wet land; requires careful management.

Class VII.—Land fairly well suited for grazing or forestry; severely limited in use by such factors as very steep slope, shallow or droughty soil, wetness, severe erosion, or excessive salinity; requires very careful management.

Class VIII.—Land not suitable for cultivation, grazing, or forestry; may be useful for wildlife, recreation, or protection of water supplies.

GEOLOGY of the 26 new watersheds is reported herein. The parts of the watershed occupied by various geological formations or series are briefly described, together with strike and dip of the strata, thickness, and relative position, when known. Faults, perched water tables, outcrops, if present, and other details relating to the movement of water within the drainage area or affecting the hydrology of the watershed are described.

SURFACE DRAINAGE refers to the ease with which excess water flows from the watershed area. The length of principal waterway is the distance from the gaging station to the most remote point on

the watershed boundary, measured along the flood plain of the watercourse.

CHARACTER OF FLOW describes the flow of the principal watercourse with respect to permanence and space. The following definitions are from Meinzer's OUTLINE OF GROUND-WATER HYDROLOGY, U.S. Geological Survey Water-Supply Paper 494, published in 1923.

As to permanence, streams may be divided into perennial, intermittent, and ephemeral streams.

A *perennial stream*, or stretch of a stream, flows continuously. Perennial streams are generally fed in part by springs, and their upper surfaces usually stand lower than the water table in the localities through which they flow.

Intermittent streams may be divided, with respect to their water source, into spring-fed intermittent streams and surface-fed intermittent streams. They also flow in direct response to precipitation.

A *spring-fed intermittent stream*, or stretch of a stream, flows only at certain times when it receives water from springs. The intermittent character of streams of this type is generally caused by fluctuations of the water table whereby the stream channels stand part of the time below and part of the time above the water table. This is the ordinary type of intermittent stream.

A *surface-fed intermittent stream*, or stretch of a stream, flows during protracted periods when it receives water from some surface source, generally the gradual and long-continued melting of snow in a mountainous or other cold tributary area. The term may be arbitrarily restricted to streams or stretches of streams that flow continuously during at least 1 month.

An *ephemeral stream*, or stretch of a stream, flows only in direct response to precipitation. It receives no water from springs and no long-continued supply from melting snow or other surface source. Its stream channel is at all times above the water table. The term may be arbitrarily restricted to streams or stretches of streams that do not flow continuously for as long as 1 month.

With respect to continuity in space, streams may be divided into interrupted and continuous streams. An *interrupted stream* contains (1) perennial stretches with intervening, intermittent, or ephemeral stretches or (2) intermittent stretches with intervening ephemeral stretches. These two classes of interrupted streams are designated, respectively, *perennial interrupted*

streams and intermittent interrupted streams. A *continuous stream* does not have interruptions in space. It may be perennial, intermittent, or ephemeral, but it does not habitually have wet and dry stretches.

INSTRUMENTATION describes type of runoff control or measuring device, number and type of precipitation gages, type of charts used, and snow courses, if employed.

WATERSHED CONDITIONS describes the general use and farm, forest, or range practices before the period of record and the conservation measures, crops, yields, and general cultural operations and practices during the period of record. Rotation crops are listed in the order grown. Operations are described with commonly used agricultural terms, and only those that appear to have a significant relationship to the hydrology of the watershed are mentioned.

GENERALLY REPRESENTS gives the broad area of application for which the data of the specific watershed are recommended. The land resource areas named are those delineated on the map titled "Location of Experimental Agricultural Watersheds of the Agricultural Research Service," on pages 12 and 13. Solid circles show the approximate locations of the "continuing" or "new" watersheds; open circles show approximate locations of the discontinued studies. For a few studies the circles indicate the locations of the project headquarters instead of the watershed locations. A larger index map with more detail is included in reference 4.

For some studies, there is an apparent contradiction between the watershed location on the maps and the descriptive information under "Generally Represents." This is caused by the small scale of the maps; it is difficult to show many small local variations in boundaries of the land resource areas. The descriptive statements, instead of the map location, should be the guide to the application of the data.

STANDARD SYMBOLS FOR TABULAR DATA

The following capital letters have been used as standard symbols throughout this volume to designate specific items or meanings:

<i>Symbol</i>	<i>Meaning</i>
A—	precipitation of unknown time of occurrence, amount generally carried forward.

<i>Symbol</i>	<i>Meaning</i>
E—	value is estimated or partially estimated.
H—	precipitation in form of hail.
L—	precipitation in form of sleet or freezing rain.
M—	mixed precipitation in form of rain, snow, and sleet.
N—	precipitation in form of rain and snow.
NR—	when used in place of value, "no record."
P—	monthly or annual precipitation in inches.
Q—	monthly or annual runoff in inches.
R—	followed by hyphen and number, recording rain gage.
RG—	rain gage, generally followed by gage number.
S—	followed by hyphen and number, standard rain gage.
S—	precipitation in form of snow.
STA AV (or AVG)—	station average for period of record.
T—	trace, generally less than 0.005 inch of precipitation and 0.01 inch of runoff (or 0.0001 inch of runoff, if four decimal places are used).

Time-of-day symbols or designations *a*, *p*, *m*, and *n* used in previous publications through 1961 have been discontinued and military time (0001 to 2400) has been substituted in publications since then. Unless stated otherwise, time used in tables is eastern, central, mountain, or Pacific standard, whichever applies to the given location.

REVISIONS OF PREVIOUSLY PUBLISHED DATA

In some instances it has been necessary to revise previously published data on specific watersheds. If the corrections involve changed values of monthly precipitation, runoff, annual maximum discharges, or maximum volumes for various durations, entire lines for the year are republished with the changed items *underlined*. These revisions are explained in footnotes following the tables in which they appear.

If additions or revisions are made in watershed descriptions, they are placed after the above-mentioned tables. In some cases a statement on geology has been added to the original descriptions. The geology for the 26 new watersheds is also described. The foregoing changes are listed by States in table 3, page 15.

PERSONNEL RESPONSIBLE FOR COMPILATIONS

At each research location, many individuals have contributed to the planning and establishment of the watersheds and the collection, compilation, and analysis of the data. Some of those who made substantial contributions to the success of the research work behind this report are—

<i>Location</i>	<i>Name or names</i>
8.....	William H. Speir, John C. Stephens.
13, 66.....	James B. Burford, Jan C. Carr, Vernon O. Shanholtz.
21, 25, 61, 71..	Larry A. Kramer, Keith E. Saxton.
26.....	Lloyd L. Harrold.
29, 31, 32.....	Gordon Waddell.
34, 37.....	Wendell R. Gwinn, William O. Ree, Francis L. Wimberly.
42.....	Walter G. Knisel, Jimmy R. Williams.
44.....	Clayton Hanson, David A. Woolhiser.
45, 47, 63, 64, 73.	Orfelio Garcia, Leonard J. Lane.
62.....	William A. Champion, Farris E. Dendy, Mary A. Marshall, Robert B. Wilson.
65.....	Clayton Hanson, Armine R. Kuhlman.
67.....	Rodger DeAngelis, Bruce Filgate, Doug- las Grant.
68.....	John M. Clark, Clifton W. Johnson.
69.....	Donn G. DeCoursey, Monroe A. Hart- man, Arlin D. Nicks, Edd D. Rhoades, Russel R. Schoff, Oscar D. Workman.
70.....	Walter G. Knisel, Clarence W. Richard- son.
75.....	Loris E. Asmussen, William C. Mills, John C. Stephens.

ADDITIONAL PUBLICATIONS BY LOCATION

In references 1, 4, 5, 6, 7, 8, 9, and 10 (see pp. 1 and 2), citations to other publications that present watershed data and interpretations of results in various journals, bulletins, and periodicals are given at the end of the introductions for many of the locations. Following is a listing, by location number, of additional references to results reported through 1967. Several items of general application to the overall program of hydrology that could not be tied to a specific location are included at the end of the listing under "General References."

8. *Vero Beach, Fla.*

STEWART, E. H., and MILLS, W. C.

1967. EFFECT OF DEPTH TO WATER TABLE AND PLANT DENSITY OF EVAPOTRANSPIRATION RATE IN SOUTHERN FLORIDA. *Amer. Soc. Agr. Engin. Trans.* 10 (6) : 746-747.

13. *Blacksburg, Va.*

SHANHOLTZ, V. O., and BURFORD, J. B.

1967. COMPUTER SYSTEMS FOR REDUCTION AND ANALYSIS OF HYDROLOGIC DATA. U.S. Dept. Agr. ARS 41-132, 90 pp.

26. *Coshocton, Ohio*

AMERMAN, C. R., and MCGUINNESS, J. L.

1967. PLOT AND SMALL WATERSHED RUNOFF: ITS RELATION TO LARGER AREAS. *Amer. Soc. Agr. Engin. Trans.* 10 (4) : 464-466.

HARROLD, L. L., and DREIBELBIS, F. R.

1967. EVALUATION OF AGRICULTURAL HYDROLOGY BY MONOLITH LYSIMETERS 1956-62. U.S. Dept. Agr. Tech. Bul. 1367, 123 pp.

——— TRIPLETT, G. B., and YOUKER, R. E.

1967. LESS SOIL AND WATER LOSS FROM NO-TILLAGE CORN. *Ohio Res. and Devlpmt. Rpt.* 52 (2) : 22-23.

——— TRIPLETT, G. B., and YOUKER, R. E.

1967. WATERSHED TESTS OF NO-TILLAGE CORN. *Jour. Soil and Water Conserv.* 22 (3) : 98-100.

MUSTONEN, S. E., and MCGUINNESS, J. L.

1967. LYSIMETER AND WATERSHED EVAPOTRANSPIRATION. *Water Resources Res.* 3 (4) : 989-996.

31. *Fennimore, Wis.*

MINSHALL, N. E.

1967. PRECIPITATION AND BASE FLOW VARIABILITY. Extract of "Hydrological Aspects of the Utilization of Water," Gen. Assembly, Bern, Switzerland, 1967, pp. 137-145.

SAXTON, K. E., and LENZ, A. T.

1967. ANTECEDENT RETENTION INDEXES PREDICT SOIL MOISTURE. *Amer. Soc. Civ. Engin. Proc., Hydraul. Div. Jour.* 93 (HY-4) : 223-241.

44. *Hastings, Nebr.*

DVORAK, V. I., and HEINEMANN, H. B.

1967. COOPERATIVE RUNOFF AND SEDIMENT INVESTIGATIONS ON MEDICINE CREEK WATERSHED IN NEBRASKA. U.S. Dept. Agr. ARS 41-130, 96 pp.

RICE, W. L., and DRAGON, F. J.

1967. CORN—THE DISAPPEARING CROP. *Nebr. Farm, Ranch and Home Quart.* 13 (4) : 9-10.

SWANSON, N. P., and DEDRICK, A. R.

1967. SOIL PARTICLES AND AGGREGATES TRANSPORTED IN WATER RUNOFF UNDER VARIOUS SLOPE CONDITIONS USING SIMULATED RAINFALL. *Amer. Soc. Agr. Engin. Trans.* 10 (2) : 246-247.

62. *Oxford, Miss.*

ASMUSSEN, L. E.

1967. POTENTIAL USES OF FLOW NET ANALYSIS IN WATERSHED ENGINEERING. *Southeast. Geol.* 8 (4) : 195-204.

CARTER, C. E., and PARSONS, D. A.

1967. FIELD TESTS ON THE COSHOCTON-TYPE WHEEL RUNOFF SAMPLER. *Amer. Soc. Agr. Engin. Trans.* 10 (1) : 133-135.

- McDOWELL, L. L., BOLTON, G. C., and RYAN, M. E.
1967. SEDIMENT PRODUCTION FROM A LAFAYETTE COUNTY, MISSISSIPPI GULLY. Miss. Water Resources Conf., Jackson, Miss., Proc. 1967, pp. 87-102.
63. *Tombstone, Ariz.*
CHERY, D. L.
1967. A REVIEW OF RAINFALL-RUNOFF, PHYSICAL MODELS AS DEVELOPED BY DIMENSIONAL ANALYSIS AND OTHER METHODS. Water Resources Res. 3 (3) : 881-889.
- RENARD, K. G., and HICKOK, R. B.
1967. SEDIMENTATION RESEARCH NEEDS IN SEMI-ARID REGIONS. Amer. Soc. Civ. Engin. Proc., Hydraul. Div. Jour. 93 (HY-1) : 45-60.
- SCHREIBER, H. A.
1967. DIGITAL COMPUTER PROGRAM FOR PARTICLE-SIZE DISTRIBUTION AND TEXTURAL CLASSIFICATION OF SOILS. Soil Sci. 104 (3) : 225-226.
- and KINCAID, D. R.
1967. REGRESSION MODELS FOR PREDICTING ON-SITE FROM SHORT-DURATION CONVECTIVE STORMS. Water Resources Res. 3 (2) : 389-395.
- U.S. DEPARTMENT OF AGRICULTURE, AGRICULTURAL RESEARCH SERVICE.
1967. WALNUT GULCH EXPERIMENTAL WATERSHED. 28 pp. Southwest Watershed Res. Ctr., Tucson, Ariz.
- WALLACE, D. E., and RENARD, K. G.
1967. CONTRIBUTION TO REGIONAL WATER TABLE FROM TRANSMISSION LOSSES OF EPHEMERAL STREAMBEDS. Amer. Soc. Agr. Engin. Trans. 10 (6) : 786-789, and 792.
65. *Newell, S. Dak.*
HANSON, C. L.
1967. STOCKPOND WATER LOSSES (IN WESTERN SOUTH DAKOTA). S. Dak. Farm and Home Res. XVIII (1) : 23-24.
68. *Boise, Idaho (Rey. Creek)*
COOPER, C. F.
1967. RAINFALL INTENSITY AND ELEVATION IN SOUTHWESTERN IDAHO. Water Resources Res. 3 (1) : 131-137.
69. *Chickasha, Okla.*
ALLEN, P. B., and WELCH, N. H.
1967. SEDIMENT TRANSPORT OF STREAMS IN THE WASHITA RIVER BASIN IN CADDO AND GRADY COUNTIES, OKLAHOMA. Water Resources Res. 3 (3) : 777-784.
- and WELCH, N. H.
1967. VARIATIONS OF SEDIMENT TRANSPORT IN THE WASHITA RIVER. Internatl. Union of Geod. and Geophys., "Symposium on River Morphology," Gen. Assembly, Bern, Switzerland, Proc. 1967, pp. 355-366.
- BLANCHARD, B. J.
1967. ANCHORING AUTOMOBILE BODIES FOR STREAM-BANK PROTECTION. U.S. Dept. Agr. ARS 41-138, 7 pp.
- HARTMAN, M. A., REE, W. O., SCHOOF, R. R., and BLANCHARD, B. J.
1967. HYDROLOGIC INFLUENCES OF A FLOOD CONTROL PROGRAM. Amer. Soc. Civ. Engin. Proc., Hydraul. Div. Jour. 93 (HY-3) : 17-25.
- NICKS, A. D.
1967. A COMPUTER MAPPING METHOD FOR ANALYSIS AND SUMMARY OF RAINFALL DATA. U.S. Dept. Agr. ARS 41-135, 8 pp.
- SCHOOF, R. R., HARTMAN, M. A., and HUNT, C. G.
1967. DETERMINING STREAMFLOW ABSTRACTIONS FROM ANTECEDENT CONDITIONS. Internatl. Union of Geod. and Geophys., Bern, Switzerland, Trans. 1967, pp. 90-97.
- General References*
BRAKENSIEK, D. L.
1967. A SIMULATED WATERSHED FLOW SYSTEM FOR HYDROGRAPH PREDICTION; A KINEMATIC APPLICATION. Internatl. Hydrol. Symp., Fort Collins, Colo., Proc. 2, pp. 18-24.
- 1967. A TECHNIQUE FOR ANALYSIS OF RUNOFF HYDROGRAPHS. Jour. Hydrol. 5 : 185-200.
- 1967. FINITE DIFFERENCING METHODS. Water Resources Res. 3 (3) : 847-860.
- 1967. KINEMATIC FLOOD ROUTING. Amer. Soc. Agr. Engin. Trans. 10 (3) : 340-343.
- DENDY, F. E., SPRABERRY, J. A., and CHAMPION, W. A.
1967. SEDIMENT DEPOSITION IN RESERVOIRS IN THE UNITED STATES. U.S. Dept. Agr. ARS 41-137, 10 pp.
- GARDNER, W. R.
1967. DEVELOPMENT OF MODERN INFILTRATION THEORY AND APPLICATION IN HYDROLOGY. Amer. Soc. Agr. Engin. Trans. 10 (3) : 379-390.
- HARROLD, L. L., BARROWS, H. L., and BENTZ, W. W.
1967. AUTOMATIC SAMPLING TECHNIQUE TO DETERMINE EXTENT OF POLLUTION IN RUNOFF FROM AGRICULTURAL WATERSHEDS. U.S. Dept. Agr. ARS 41-136, 12 pp.
- HERSHFIELD, D. M.
1967. RAINFALL INPUT FOR HYDROLOGIC MODELS. Extract of "Geochemistry, Precipitation, Evaporation, Soil-Moisture, Hydrometry," Gen. Assembly, Bern, Switzerland, 1967, pp. 178-188.
- 1967. SOME METEOROLOGICAL REQUIREMENTS IN WATERSHED ENGINEERING RESEARCH. Amer. Water Resources Assoc. Third Annu. Conf., San Francisco, Calif., Proc. 1967 : pp. 485-492.
- and SCHLEUSENER, R. A.
1967. PRECIPITATION. Amer. Geophys. Union Trans. 48 (2) : 707-711.
- HICKOK, R. B.
1967. WATER MANAGEMENT ON SEMIARID WATERSHED. 11th Ariz. Watershed Symp., Phoenix, Ariz., Sept. 20, Proc. 1967, pp. 9-14.

HOLTAN, H. N., and CREITZ, N. R.

1967. INFLUENCE OF SOILS, VEGETATION, AND GEOMORPHOLOGY ON ELEMENTS OF THE FLOOD HYDROGRAPH. Internatl. Assoc. Sci. Hydrol. Symp., Floods and Their Computations, Leningrad, Proc. 1967, pp. 755-767.

——— ENGLAND, C. B., and ALLEN, W. H.

1967. HYDROLOGIC CAPACITIES OF SOILS IN WATERSHED ENGINEERING. Internatl. Hydrol. Symp., Fort Collins, Colo., Sept. 7-8, Proc. 1, pp. 218-226.

——— ENGLAND, C. B., SHANHOLTZ, V. O.

1967. CONCEPTS IN HYDROLOGIC SOIL GROUPING. Amer. Soc. Agr. Engin. Trans. 10 (3) : 407-410.

KNISEL, W. G., and YEVJEVICH, V.

1967. THE STATISTICAL MEASURE OF HYDROLOGIC TIME SERIES. Internatl. Hydrol. Symp., Fort Collins, Colo., Sept. 7-8, Proc. 1, pp. 306-313.

KOHLER, M. A., and PARMELE, L. H.

1967. GENERALIZED ESTIMATES OF FREE WATER EVAPORATION. Water Resources Res. 3 (4) : 997-1005.

LIGGETT, J. A., and WOOLHISER, D. A.

1967. THE USE OF THE SHALLOW WATER EQUATIONS IN RUNOFF COMPUTATION. Amer. Water Resources Assoc., Amer. Water Resources Conf., Proc. 1967, pp. 117-126.

OVERTON, D. E.

1967. ANALYTICAL SIMULATION OF WATERSHED HYDROGRAPHS FROM RAINFALL. Internatl. Hydrol. Symp., Fort Collins, Colo., Sept. 7-8, Proc. 2, pp. 9-17.

1967. FLOW RETARDANCE COEFFICIENTS FOR SELECTED PRISMATIC CHANNELS. Amer. Soc. Agr. Engin. Trans. 10 (3) : 327-329.

WADLEIGH, C. H.

1967. AGRICULTURAL POLLUTION OF WATER RESOURCES. Soil Conserv. 33 (2) : 27-30.

WHISLER, F. D., and KLUTE, A.

1967. RAINFALL INFILTRATION INTO A VERTICAL SOIL COLUMN. Amer. Soc. Agr. Engin. Trans. 10 (3) : 391-395.

WOOLHISER, D. A.

1967. GENERAL REPORT—NEW IDEAS AND SCIENTIFIC METHODS IN DETERMINISTIC (PARAMETRIC, DYNAMIC, PHYSICAL OR ANALYTICAL) HYDROLOGY. Internatl. Hydrol. Symp., Fort Collins, Colo., Sept. 7-8, Proc. 2, pp. 197-209.

——— and LIGGETT, J. A.

1967. UNSTEADY, ONE-DIMENSIONAL FLOW OVER A PLANE—THE RISING HYDROGRAPH. Water Resources Res. 3 (3) : 753-771.

UNITED STATES INDEX MAP AND RELATED DATA

[Pages 12 through 15]

LOCATION OF EXPERIMENTAL AGRICULTURAL WATERSHEDS OF THE AGRICULTURAL RESEARCH SERVICE (1967)

BY
LAND RESOURCE REGIONS
AND
MAJOR LAND RESOURCE AREAS
OF THE
UNITED STATES
(48 contiguous States)

KEY TO RESEARCH LOCATIONS
● Current (continuing) studies
○ Discontinued locations
NOTE: Location 16 was not used



SCALE in MILES
0 100 200 300

LEGEND

T Land resource region
— Boundaries
--- Major land resource area
--- Boundaries
— State lines

LEGEND FOR LAND RESOURCE REGIONS AND MAJOR LAND RESOURCE AREAS

(of the 48 conterminous States)

A

NORTHWESTERN FOREST, FORAGE, AND SPECIALTY CROP REGION

- 1 Northern Pacific Coast Range and Valleys
- 2 Willamette and Puget Sound Valleys
- 3 Olympic and Western Slope Cascade Mountains
- 4 California Coastal Redwood Belt
- 5 Siskiyou-Trinity Area

B

NORTHWESTERN WHEAT AND RANGE REGION

- 6 Eastern Slope Cascade Mountains
- 7 Columbia Plateau
- 8 Palouse and Nez-Perce Prairies
- 10 Upper Snake River Lava Plains and Hills
- 11 Snake River Plains
- 12 Lost River Plateaus and Mountains
- 13 Eastern Idaho Plateaus

C

CALIFORNIA SUBTROPICAL FRUIT, TRUCK, AND SPECIALTY CROP REGION

- 14 Central California Valleys
- 15 Central California Coast Range
- 16 California Delta
- 17 Sacramento and San Joaquin Valleys
- 18 Sierra Nevada Foothills
- 19 Southern California Coastal Plain
- 20 Southern California Mountains

D

WESTERN RANGE AND IRRIGATED REGION

- 21 Klamath and Shasta Valleys and Basins
- 22 Klamath River Valley
- 23 Malheur High Plateau
- 24 Humboldt Area
- 25 Owyhee High Plateau
- 26 Carson Basin and Mountains
- 27 Fallon-Lovelock Area
- 28 Great Salt Lake Area
- 29 Southern Nevada Basin and Range
- 30 Imperial Valley
- 31 Northern Intermountain Desertic Basins
- 32 Semiarid Rocky Mountains
- 33 Central Desertic Basins, Mountains and Plateaus
- 34 (See E below)
- 35 Colorado and Green River Plateaus
- 36 New Mexico and Arizona Plateaus and Basins
- 37 Colorado Plateau
- 38 Black Hills, Badlands, and Great Plains
- 39 Arizona and New Mexico Mountains
- 40 Central Arizona Basin and Range
- 41 Southeastern Arizona Basin and Range
- 42 Southern Desertic Basins, Plains and Mountains

- 30 Imperial Valley
- 31 Northern Intermountain Desertic Basins
- 32 Semiarid Rocky Mountains
- 33 Central Desertic Basins, Mountains and Plateaus
- 34 (See E below)
- 35 Colorado and Green River Plateaus
- 36 New Mexico and Arizona Plateaus and Basins
- 37 Colorado Plateau
- 38 Black Hills, Badlands, and Great Plains
- 39 Arizona and New Mexico Mountains
- 40 Central Arizona Basin and Range
- 41 Southeastern Arizona Basin and Range
- 42 Southern Desertic Basins, Plains and Mountains

- 30 Imperial Valley
- 31 Northern Intermountain Desertic Basins
- 32 Semiarid Rocky Mountains
- 33 Central Desertic Basins, Mountains and Plateaus
- 34 (See E below)
- 35 Colorado and Green River Plateaus
- 36 New Mexico and Arizona Plateaus and Basins
- 37 Colorado Plateau
- 38 Black Hills, Badlands, and Great Plains
- 39 Arizona and New Mexico Mountains
- 40 Central Arizona Basin and Range
- 41 Southeastern Arizona Basin and Range
- 42 Southern Desertic Basins, Plains and Mountains

- 30 Imperial Valley
- 31 Northern Intermountain Desertic Basins
- 32 Semiarid Rocky Mountains
- 33 Central Desertic Basins, Mountains and Plateaus
- 34 (See E below)
- 35 Colorado and Green River Plateaus
- 36 New Mexico and Arizona Plateaus and Basins
- 37 Colorado Plateau
- 38 Black Hills, Badlands, and Great Plains
- 39 Arizona and New Mexico Mountains
- 40 Central Arizona Basin and Range
- 41 Southeastern Arizona Basin and Range
- 42 Southern Desertic Basins, Plains and Mountains

- 30 Imperial Valley
- 31 Northern Intermountain Desertic Basins
- 32 Semiarid Rocky Mountains
- 33 Central Desertic Basins, Mountains and Plateaus
- 34 (See E below)
- 35 Colorado and Green River Plateaus
- 36 New Mexico and Arizona Plateaus and Basins
- 37 Colorado Plateau
- 38 Black Hills, Badlands, and Great Plains
- 39 Arizona and New Mexico Mountains
- 40 Central Arizona Basin and Range
- 41 Southeastern Arizona Basin and Range
- 42 Southern Desertic Basins, Plains and Mountains

- 30 Imperial Valley
- 31 Northern Intermountain Desertic Basins
- 32 Semiarid Rocky Mountains
- 33 Central Desertic Basins, Mountains and Plateaus
- 34 (See E below)
- 35 Colorado and Green River Plateaus
- 36 New Mexico and Arizona Plateaus and Basins
- 37 Colorado Plateau
- 38 Black Hills, Badlands, and Great Plains
- 39 Arizona and New Mexico Mountains
- 40 Central Arizona Basin and Range
- 41 Southeastern Arizona Basin and Range
- 42 Southern Desertic Basins, Plains and Mountains

- 30 Imperial Valley
- 31 Northern Intermountain Desertic Basins
- 32 Semiarid Rocky Mountains
- 33 Central Desertic Basins, Mountains and Plateaus
- 34 (See E below)
- 35 Colorado and Green River Plateaus
- 36 New Mexico and Arizona Plateaus and Basins
- 37 Colorado Plateau
- 38 Black Hills, Badlands, and Great Plains
- 39 Arizona and New Mexico Mountains
- 40 Central Arizona Basin and Range
- 41 Southeastern Arizona Basin and Range
- 42 Southern Desertic Basins, Plains and Mountains

- 30 Imperial Valley
- 31 Northern Intermountain Desertic Basins
- 32 Semiarid Rocky Mountains
- 33 Central Desertic Basins, Mountains and Plateaus
- 34 (See E below)
- 35 Colorado and Green River Plateaus
- 36 New Mexico and Arizona Plateaus and Basins
- 37 Colorado Plateau
- 38 Black Hills, Badlands, and Great Plains
- 39 Arizona and New Mexico Mountains
- 40 Central Arizona Basin and Range
- 41 Southeastern Arizona Basin and Range
- 42 Southern Desertic Basins, Plains and Mountains

- 30 Imperial Valley
- 31 Northern Intermountain Desertic Basins
- 32 Semiarid Rocky Mountains
- 33 Central Desertic Basins, Mountains and Plateaus
- 34 (See E below)
- 35 Colorado and Green River Plateaus
- 36 New Mexico and Arizona Plateaus and Basins
- 37 Colorado Plateau
- 38 Black Hills, Badlands, and Great Plains
- 39 Arizona and New Mexico Mountains
- 40 Central Arizona Basin and Range
- 41 Southeastern Arizona Basin and Range
- 42 Southern Desertic Basins, Plains and Mountains

- 30 Imperial Valley
- 31 Northern Intermountain Desertic Basins
- 32 Semiarid Rocky Mountains
- 33 Central Desertic Basins, Mountains and Plateaus
- 34 (See E below)
- 35 Colorado and Green River Plateaus
- 36 New Mexico and Arizona Plateaus and Basins
- 37 Colorado Plateau
- 38 Black Hills, Badlands, and Great Plains
- 39 Arizona and New Mexico Mountains
- 40 Central Arizona Basin and Range
- 41 Southeastern Arizona Basin and Range
- 42 Southern Desertic Basins, Plains and Mountains

- 30 Imperial Valley
- 31 Northern Intermountain Desertic Basins
- 32 Semiarid Rocky Mountains
- 33 Central Desertic Basins, Mountains and Plateaus
- 34 (See E below)
- 35 Colorado and Green River Plateaus
- 36 New Mexico and Arizona Plateaus and Basins
- 37 Colorado Plateau
- 38 Black Hills, Badlands, and Great Plains
- 39 Arizona and New Mexico Mountains
- 40 Central Arizona Basin and Range
- 41 Southeastern Arizona Basin and Range
- 42 Southern Desertic Basins, Plains and Mountains

- 30 Imperial Valley
- 31 Northern Intermountain Desertic Basins
- 32 Semiarid Rocky Mountains
- 33 Central Desertic Basins, Mountains and Plateaus
- 34 (See E below)
- 35 Colorado and Green River Plateaus
- 36 New Mexico and Arizona Plateaus and Basins
- 37 Colorado Plateau
- 38 Black Hills, Badlands, and Great Plains
- 39 Arizona and New Mexico Mountains
- 40 Central Arizona Basin and Range
- 41 Southeastern Arizona Basin and Range
- 42 Southern Desertic Basins, Plains and Mountains

- 30 Imperial Valley
- 31 Northern Intermountain Desertic Basins
- 32 Semiarid Rocky Mountains
- 33 Central Desertic Basins, Mountains and Plateaus
- 34 (See E below)
- 35 Colorado and Green River Plateaus
- 36 New Mexico and Arizona Plateaus and Basins
- 37 Colorado Plateau
- 38 Black Hills, Badlands, and Great Plains
- 39 Arizona and New Mexico Mountains
- 40 Central Arizona Basin and Range
- 41 Southeastern Arizona Basin and Range
- 42 Southern Desertic Basins, Plains and Mountains

- 30 Imperial Valley
- 31 Northern Intermountain Desertic Basins
- 32 Semiarid Rocky Mountains
- 33 Central Desertic Basins, Mountains and Plateaus
- 34 (See E below)
- 35 Colorado and Green River Plateaus
- 36 New Mexico and Arizona Plateaus and Basins
- 37 Colorado Plateau
- 38 Black Hills, Badlands, and Great Plains
- 39 Arizona and New Mexico Mountains
- 40 Central Arizona Basin and Range
- 41 Southeastern Arizona Basin and Range
- 42 Southern Desertic Basins, Plains and Mountains

- 30 Imperial Valley
- 31 Northern Intermountain Desertic Basins
- 32 Semiarid Rocky Mountains
- 33 Central Desertic Basins, Mountains and Plateaus
- 34 (See E below)
- 35 Colorado and Green River Plateaus
- 36 New Mexico and Arizona Plateaus and Basins
- 37 Colorado Plateau
- 38 Black Hills, Badlands, and Great Plains
- 39 Arizona and New Mexico Mountains
- 40 Central Arizona Basin and Range
- 41 Southeastern Arizona Basin and Range
- 42 Southern Desertic Basins, Plains and Mountains

- 30 Imperial Valley
- 31 Northern Intermountain Desertic Basins
- 32 Semiarid Rocky Mountains
- 33 Central Desertic Basins, Mountains and Plateaus
- 34 (See E below)
- 35 Colorado and Green River Plateaus
- 36 New Mexico and Arizona Plateaus and Basins
- 37 Colorado Plateau
- 38 Black Hills, Badlands, and Great Plains
- 39 Arizona and New Mexico Mountains
- 40 Central Arizona Basin and Range
- 41 Southeastern Arizona Basin and Range
- 42 Southern Desertic Basins, Plains and Mountains

- 30 Imperial Valley
- 31 Northern Intermountain Desertic Basins
- 32 Semiarid Rocky Mountains
- 33 Central Desertic Basins, Mountains and Plateaus
- 34 (See E below)
- 35 Colorado and Green River Plateaus
- 36 New Mexico and Arizona Plateaus and Basins
- 37 Colorado Plateau
- 38 Black Hills, Badlands, and Great Plains
- 39 Arizona and New Mexico Mountains
- 40 Central Arizona Basin and Range
- 41 Southeastern Arizona Basin and Range
- 42 Southern Desertic Basins, Plains and Mountains

- 30 Imperial Valley
- 31 Northern Intermountain Desertic Basins
- 32 Semiarid Rocky Mountains
- 33 Central Desertic Basins, Mountains and Plateaus
- 34 (See E below)
- 35 Colorado and Green River Plateaus
- 36 New Mexico and Arizona Plateaus and Basins
- 37 Colorado Plateau
- 38 Black Hills, Badlands, and Great Plains
- 39 Arizona and New Mexico Mountains
- 40 Central Arizona Basin and Range
- 41 Southeastern Arizona Basin and Range
- 42 Southern Desertic Basins, Plains and Mountains

- 30 Imperial Valley
- 31 Northern Intermountain Desertic Basins
- 32 Semiarid Rocky Mountains
- 33 Central Desertic Basins, Mountains and Plateaus
- 34 (See E below)
- 35 Colorado and Green River Plateaus
- 36 New Mexico and Arizona Plateaus and Basins
- 37 Colorado Plateau
- 38 Black Hills, Badlands, and Great Plains
- 39 Arizona and New Mexico Mountains
- 40 Central Arizona Basin and Range
- 41 Southeastern Arizona Basin and Range
- 42 Southern Desertic Basins, Plains and Mountains

- 30 Imperial Valley
- 31 Northern Intermountain Desertic Basins
- 32 Semiarid Rocky Mountains
- 33 Central Desertic Basins, Mountains and Plateaus
- 34 (See E below)
- 35 Colorado and Green River Plateaus
- 36 New Mexico and Arizona Plateaus and Basins
- 37 Colorado Plateau
- 38 Black Hills, Badlands, and Great Plains
- 39 Arizona and New Mexico Mountains
- 40 Central Arizona Basin and Range
- 41 Southeastern Arizona Basin and Range
- 42 Southern Desertic Basins, Plains and Mountains

- 30 Imperial Valley
- 31 Northern Intermountain Desertic Basins
- 32 Semiarid Rocky Mountains
- 33 Central Desertic Basins, Mountains and Plateaus
- 34 (See E below)
- 35 Colorado and Green River Plateaus
- 36 New Mexico and Arizona Plateaus and Basins
- 37 Colorado Plateau
- 38 Black Hills, Badlands, and Great Plains
- 39 Arizona and New Mexico Mountains
- 40 Central Arizona Basin and Range
- 41 Southeastern Arizona Basin and Range
- 42 Southern Desertic Basins, Plains and Mountains

- 30 Imperial Valley
- 31 Northern Intermountain Desertic Basins
- 32 Semiarid Rocky Mountains
- 33 Central Desertic Basins, Mountains and Plateaus
- 34 (See E below)
- 35 Colorado and Green River Plateaus
- 36 New Mexico and Arizona Plateaus and Basins
- 37 Colorado Plateau
- 38 Black Hills, Badlands, and Great Plains
- 39 Arizona and New Mexico Mountains
- 40 Central Arizona Basin and Range
- 41 Southeastern Arizona Basin and Range
- 42 Southern Desertic Basins, Plains and Mountains

- 30 Imperial Valley
- 31 Northern Intermountain Desertic Basins
- 32 Semiarid Rocky Mountains
- 33 Central Desertic Basins, Mountains and Plateaus
- 34 (See E below)
- 35 Colorado and Green River Plateaus
- 36 New Mexico and Arizona Plateaus and Basins
- 37 Colorado Plateau
- 38 Black Hills, Badlands, and Great Plains
- 39 Arizona and New Mexico Mountains
- 40 Central Arizona Basin and Range
- 41 Southeastern Arizona Basin and Range
- 42 Southern Desertic Basins, Plains and Mountains

- 30 Imperial Valley
- 31 Northern Intermountain Desertic Basins
- 32 Semiarid Rocky Mountains
- 33 Central Desertic Basins, Mountains and Plateaus
- 34 (See E below)
- 35 Colorado and Green River Plateaus
- 36 New Mexico and Arizona Plateaus and Basins
- 37 Colorado Plateau
- 38 Black Hills, Badlands, and Great Plains
- 39 Arizona and New Mexico Mountains
- 40 Central Arizona Basin and Range
- 41 Southeastern Arizona Basin and Range
- 42 Southern Desertic Basins, Plains and Mountains

- 30 Imperial Valley
- 31 Northern Intermountain Desertic Basins
- 32 Semiarid Rocky Mountains
- 33 Central Desertic Basins, Mountains and Plateaus
- 34 (See E below)
- 35 Colorado and Green River Plateaus
- 36 New Mexico and Arizona Plateaus and Basins
- 37 Colorado Plateau
- 38 Black Hills, Badlands, and Great Plains
- 39 Arizona and New Mexico Mountains
- 40 Central Arizona Basin and Range
- 41 Southeastern Arizona Basin and Range
- 42 Southern Desertic Basins, Plains and Mountains

- 30 Imperial Valley
- 31 Northern Intermountain Desertic Basins
- 32 Semiarid Rocky Mountains
- 33 Central Desertic Basins, Mountains and Plateaus
- 34 (See E below)
- 35 Colorado and Green River Plateaus
- 36 New Mexico and Arizona Plateaus and Basins
- 37 Colorado Plateau
- 38 Black Hills, Badlands, and Great Plains
- 39 Arizona and New Mexico Mountains
- 40 Central Arizona Basin and Range
- 41 Southeastern Arizona Basin and Range
- 42 Southern Desertic Basins, Plains and Mountains

- 30 Imperial Valley
- 31 Northern Intermountain Desertic Basins
- 32 Semiarid Rocky Mountains
- 33 Central Desertic Basins, Mountains and Plateaus
- 34 (See E below)
- 35 Colorado and Green River Plateaus
- 36 New Mexico and Arizona Plateaus and Basins
- 37 Colorado Plateau
- 38 Black Hills, Badlands, and Great Plains
- 39 Arizona and New Mexico Mountains
- 40 Central Arizona Basin and Range
- 41 Southeastern Arizona Basin and Range
- 42 Southern Desertic Basins, Plains and Mountains

- 30 Imperial Valley
- 31 Northern Intermountain Desertic Basins
- 32 Semiarid Rocky Mountains
- 33 Central Desertic Basins, Mountains and Plateaus
- 34 (See E below)
- 35 Colorado and Green River Plateaus
- 36 New Mexico and Arizona Plateaus and Basins
- 37 Colorado Plateau
- 38 Black Hills, Badlands, and Great Plains
- 39 Arizona and New Mexico Mountains
- 40 Central Arizona Basin and Range
- 41 Southeastern Arizona Basin and Range
- 42 Southern Desertic Basins, Plains and Mountains

- 30 Imperial Valley
- 31 Northern Intermountain Desertic Basins
- 32 Semiarid Rocky Mountains
- 33 Central Desertic Basins, Mountains and Plateaus
- 34 (See E below)
- 35 Colorado and Green River Plateaus
- 36 New Mexico and Arizona Plateaus and Basins
- 37 Colorado Plateau
- 38 Black Hills, Badlands, and Great Plains
- 39 Arizona and New Mexico Mountains
- 40 Central Arizona Basin and Range
- 41 Southeastern Arizona Basin and Range
- 42 Southern Desertic Basins, Plains and Mountains

- 30 Imperial Valley
- 31 Northern Intermountain Desertic Basins
- 32 Semiarid Rocky Mountains
- 33 Central Desertic Basins, Mountains and Plateaus
- 34 (See E below)
- 35 Colorado and Green River Plateaus
- 36 New Mexico and Arizona Plateaus and Basins
- 37 Colorado Plateau
- 38 Black Hills, Badlands, and Great Plains
- 39 Arizona and New Mexico Mountains
- 40 Central Arizona Basin and Range
- 41 Southeastern Arizona Basin and Range
- 42 Southern Desertic Basins, Plains and Mountains

- 30 Imperial Valley
- 31 Northern Intermountain Desertic Basins
- 32 Semiarid Rocky Mountains
- 33 Central Desertic Basins, Mountains and Plateaus
- 34 (See E below)
- 35 Colorado and Green River Plateaus
- 36 New Mexico and Arizona Plateaus and Basins
- 37 Colorado Plateau
- 38 Black Hills, Badlands, and Great Plains
- 39 Arizona and New Mexico Mountains
- 40 Central Arizona Basin and Range
- 41 Southeastern Arizona Basin and Range
- 42 Southern Desertic Basins, Plains and Mountains

Compiled by Morris E. Austin
Information from SCS, State, and other Offices

F NORTHERN GREAT PLAINS SPRING WHEAT REGION

- 52 Brown Glaciated Plain
- 53 Dark Brown Glaciated Plain
- 54 Rolling Soft Shale Plain
- 55 Black Glaciated Plains
- 56 Red River Valley of the North
- 57 Western Minnesota Forest-Prairie Transition

G WESTERN GREAT PLAINS RANGE AND IRRIGATED REGION

- 58 Northern Rolling High Plains
- 59 Northern Smooth High Plains
- 60 Pierre Shale Plains and Badlands
- 61 Black Hills Foothills
- 62 Black Hills
- 63 Rolling Pierre Shale Plains
- 64 Mixed Sandy and Silty Tableland
- 65 Nebraska Sand Hills
- 66 Dakota-Nebraska Eroded Tableland
- 67 Central High Plains
- 68 Irrigated Upper Plateau River Valley
- 69 Upper Arkansas Valley Rolling Plains
- 70 Texas-Canadian Plains and Valleys

H CENTRAL GREAT PLAINS WINTER WHEAT AND RANGE REGION

- 71 Central Nebraska Loess Hills
- 72 Central High Tableland
- 73 Rolling Plains and Breaks
- 74 Central Loess Sandstone Hills
- 75 Great Bend Sand Plains
- 76 Bluestem Hills
- 77 Southern High Plains
- 78 Central Rolling Red Plains
- 79 Great Bend Sand Plains
- 80 Central Rolling Red Prairies

I SOUTHWESTERN PLATEAUS AND PLAINS, RANGE AND COTTON REGION

- 81 Edwards Plateau
- 82 Texas Central Basin
- 83 Rio Grande Plain
- 84 Cross Timbers
- 85 Texas Plateau
- 86 Texas Blackland Prairie
- 87 Texas Claypan Area

K NORTHERN LAKE STATES FOREST AND FORAGE REGION

- 88 Northern Minnesota Swamps and Lakes
- 89 Minnesota Rockland Hills
- 90 Central Wisconsin and Minnesota Thin Loess and Till
- 91 Wisconsin and Minnesota Sandy Outwash
- 92 Superior Lake Plain
- 93 Northern Michigan and Wisconsin Stony, Sandy, and Rocky Plains and Hills
- 94 Northern Michigan Sandy Drift

L LAKE STATES FRUIT, TRUCK, AND DAIRY REGION

- 95 Southeastern Wisconsin Drift Plain
- 96 Western Michigan Fruit Belt
- 97 Southern Wisconsin Fruit and Truck Belt
- 98 Southern Michigan Drift Plain
- 99 Erie-Huron Lake Plain
- 100 Erie Fruit and Truck Area
- 101 Ontario-Mohawk Plain

M CENTRAL FEED GRAINS AND LIVESTOCK REGION

- 102 Loess, Till, and Sandy Prairies
- 103 Central Iowa and Minnesota Till Prairies
- 104 Eastern Iowa and Minnesota Till Prairies

(continued)

- 105 Northern Mississippi Valley Loess Hills
- 106 Nebraska and Kansas Loess-Drift Hills
- 107 Iowa and Missouri Deep Loess Hills
- 108 Illinois and Iowa Deep Loess and Drift
- 109 Iowa and Missouri Heavy Till Plain
- 110 Indiana and Ohio Heavy Till Plain
- 111 Indiana and Ohio Heavy Till Plain
- 112 Cherokee Prairies
- 113 Central Claypan Area
- 114 Central Illinois and Indiana Thin Loess and Till Plain
- 115 Central Mississippi Valley Wooded Slopes

EAST AND CENTRAL GENERAL FARMING AND FOREST REGION

- 116 (See M Above)
- 117 Oriskany Highlands
- 118 Boston Mountains
- 119 Arkansas Valley and Ridges
- 120 Kentucky and Indiana Sandstone and Shale Hills and Valleys
- 121 Kentucky Bluegrass
- 122 Highland Rim and Pennyroyal
- 123 Nashville Basin
- 124 Western Allegheny Plateau
- 125 Cumberland Plateau and Mountains
- 126 Central Allegheny Plateau
- 127 Eastern Allegheny Plateau and Mountains
- 128 Southern Appalachian Ridges and Valleys
- 129 Sand Mountain
- 130 Blue Ridge

MISSISSIPPI DELTA COTTON AND FEED GRAINS REGION

- 131 Southern Mississippi Valley Alluvium
- 132 Eastern Arkansas Prairies
- 134 (See P below)

SOUTH ATLANTIC AND GULF SLOPE CASH CROP, FOREST, AND LIVESTOCK REGION

- 86 (See J Above)
- 133 Southern Coastal Plain
- 134 Southern Mississippi Valley Silty Uplands
- 135 Alabama and Mississippi Blackland Prairie
- 136 Southern Piedmont
- 137 Carolina and Georgia Sandhills
- 138 North Central Florida Ridge

NORTHEASTERN FORAGE AND FOREST REGION

- 139 Eastern Ohio Till Plain
- 140 Glaciated Allegheny Plateau and Catskill Mountains
- 141 Tughill Plateau
- 142 St. Lawrence-Champlain Plain
- 143 Northeastern Mountains
- 144 Connecticut and Eastern New York Upland
- 145 Connecticut Valley
- 146 Arcotook Area

NORTHERN ATLANTIC SLOPE TRUCK, FRUIT, AND POULTRY REGION

- 147 Northern Appalachian Ridges and Valleys
- 148 Northern Piedmont
- 149 Northern Coastal Plain

ATLANTIC AND GULF COAST LOWLANDS, FOREST AND TRUCK CROP REGION

- 150 Gulf Coast Prairies
- 151 Gulf Coast Marsh
- 152 Gulf Coast Flatwoods
- 153 Atlantic Coast Flatwoods

FLORIDA SUBTROPICAL FRUIT, TRUCK CROP, AND RANGE REGION

- 154 South Central Florida Ridge
- 155 Southern Florida Flatwoods
- 156 Florida Everglades and Associated Areas

TABLE 1.—Experimental agricultural watersheds, by States, localities, and locations, under study during 1967 and included in this publication

State	Locality	Major land resource area ^{1/}	Assigned location No.	Watershed units Number	Events reported Number	Pages (inclusive)
Arizona.....	Safford.....	D-41, D-42	45	4	4	205-212
	Tombstone.....	D-41	63	<u>2/</u> 6	7	265-279
Florida.....	Vero Beach.....	U-55	8	4	4	18-29
Georgia.....	Watkinsville ^{3/} ...	P-136	10	1	-	---
Idaho.....	Reynolds Creek..	D-23, D-25	68	<u>4/</u> 8	8	353-388
Illinois.....	Monticello ^{3/}	M-108	61	2	-	---
Iowa.....	Iowa City.....	M-108	21	1	1	81,82
	Treynor.....	M-107	71	5	10	601-618
Mississippi.....	Oxford.....	P-133, P-134	62	15	15	222-264
Missouri.....	McCredie.....	M-113	25	1	0	83
Nebraska.....	Hastings.....	H-71, H-73, H-75	44	15	11	178-204
New Mexico.....	Albuquerque.....	D-42	47	3	3	213-221
	Santa Rosa.....	G-70	64	<u>5/</u> 1	-	---
	Fort Stanton....	D-39	73	<u>5/</u> 1	-	---
New York.....	Cohocton ^{3/}	R-140	2	1	-	---
North Carolina...	Ahoskie.....	P-133	75	4	4	623-634
Ohio.....	Coshocton.....	N-124	26	35	0	84-101
Oklahoma.....	Cherokee.....	H-80	34	6	18	111-128
	Chickasha.....	H-78, H-80, J-84	69	<u>7/</u> 40	46	389-523
	Stillwater.....	H-80	37	3	6	129-137
South Dakota.....	Newell.....	G-58, G-60	65	7	0	280-293
	Cottonwood.....	G-60	72	3	0	619-622
Texas.....	Riesel (Waco)...	J-86	42	20	20	138-177
	Sonora.....	I-81	70	<u>8/</u> 13	35	524-600
Vermont.....	North Danville..	R-144	67	<u>9/</u> 5	15	302-352
Virginia.....	Blacksburg.....	N-128, S-147, N-130, P-136 S-148	13	14	14	30-80
West Virginia.....	Moorefield.....	N-128, S-147	66	4	4	294-301
Wisconsin.....	Fennimore.....	M-105	31	4	4	102-110

^{1/} See location map and legend, pp. 12 and 13.

^{2/} Watersheds 63.001, 63.002, 63.006, 63.008, and 63.011 are being rerated; as soon as these flume ratings are completed, they will be fully reported.

^{3/} Report deferred on watersheds.

^{4/} Includes data on 4 new watersheds, W-4, W-11, W-12, and W-14, for location 68, Reynolds Creek, Idaho.

^{5/} P and Q data for watershed 64.001, Santa Rosa, New Mex. are being reevaluated and when complete, revised data will be reported.

^{6/} P and Q data for 1967 for watershed 73.002, Fort Stanton, New Mex., will be reported later.

^{7/} Includes data on 8 new watersheds, 514, 5141, 5142, 5143, 5144, 5145, 5146, and 311.

^{8/} Includes data on 13 new watersheds, W-14, S-9 through S-13, and W-1 through W-7 for Sonora, Tex. (70).

^{9/} Includes data on 1 new watershed, W-4, for North Danville, Vt. (67).

TABLE 2.—Watersheds, by States, where observations were discontinued during 1966 (For studies discontinued before 1966, see table 1 in previous publication)

State	Locality	Major land resource area ^{1/}	Discontinued watershed unit		
			Number	Record period	Assigned location and watershed No.
Oklahoma.....	Chickasha.....	D-23, D-25	1	1961-66.....	69.4
Wisconsin.....	Colby.....	K-90	1	1949-66.....	29.1

^{1/} See location map and legend, pp. 12 and 13.

TABLE 3.— Additions or revisions, by States, regarding data published before 1967

State	Locality	Location Page	Addition or revision
Arizona.....	Tombstone....	63.3-1; 63.4-1,-2	Monthly precipitation and runoff, annual maximum peak discharges and annual maximum volumes of runoff for selected time intervals previously reported (1954 through 1966) have been reevaluated and are included with the values for 1967.
		63.7-1	Monthly runoff amounts and maximum runoff volumes for selected time intervals previously reported for 1966 have been reevaluated and are included with those values for 1967.
Idaho.....	Reynolds.....	68.4;-11;-12, -14	Data <u>added</u> for 4 new watersheds, W-4, W-11, W-12, and W-14, beginning in 1967.
New Mexico.....	Albuquerque..	47.1 -1,-2; 47.2 -1,-2; 47.3 -1,-2	Monthly precipitation and runoff, annual maximum peak discharges, and maximum volumes of runoff for selected time intervals previously reported (1939 through 1966) have been reevaluated and are included with the values for 1967.
Oklahoma.....	Chickasha....	69.9-3,4	Data sheet for Watershed 612, which were not reproduced clearly in Ref. 10 (1966) are <u>reprinted</u> .
		69.20;-21; -22;-23; -24;-25; -26;-27	Data added for 8 new watersheds, 514, 5141, 5142, 5143, 5144, 5145, 5146, and 311, beginning in 1967.
South Dakota.....	Newell.....	65.2-2;-5-2; -7-2;-12-2; -13-2;-14-2; -15-2	Heading for tables listing discharge, "Mean Daily Discharge (Inches)," in ref. 9 (1965) and ref. 10 (1966) <u>should be</u> "Daily Discharge (Inches)."
Texas.....	Sonora.....	70.1 through 70.13	Data <u>added</u> for 13 new watersheds, W-14, S-9 through S-13, and W-1 through W-7.
Vermont.....	North..... Danville	67.4	Data <u>added</u> for one new watershed, W-4, beginning in 1965.

**WATERSHED DATA BY LOCATION NUMBER
AND
DECIMAL PAGING**

[8.1-1 TO 75.4-3, A TOTAL OF 617 DATA SHEETS]

For location by States and Land Resource Areas
and Regions, see U.S. Index Map, page 12.

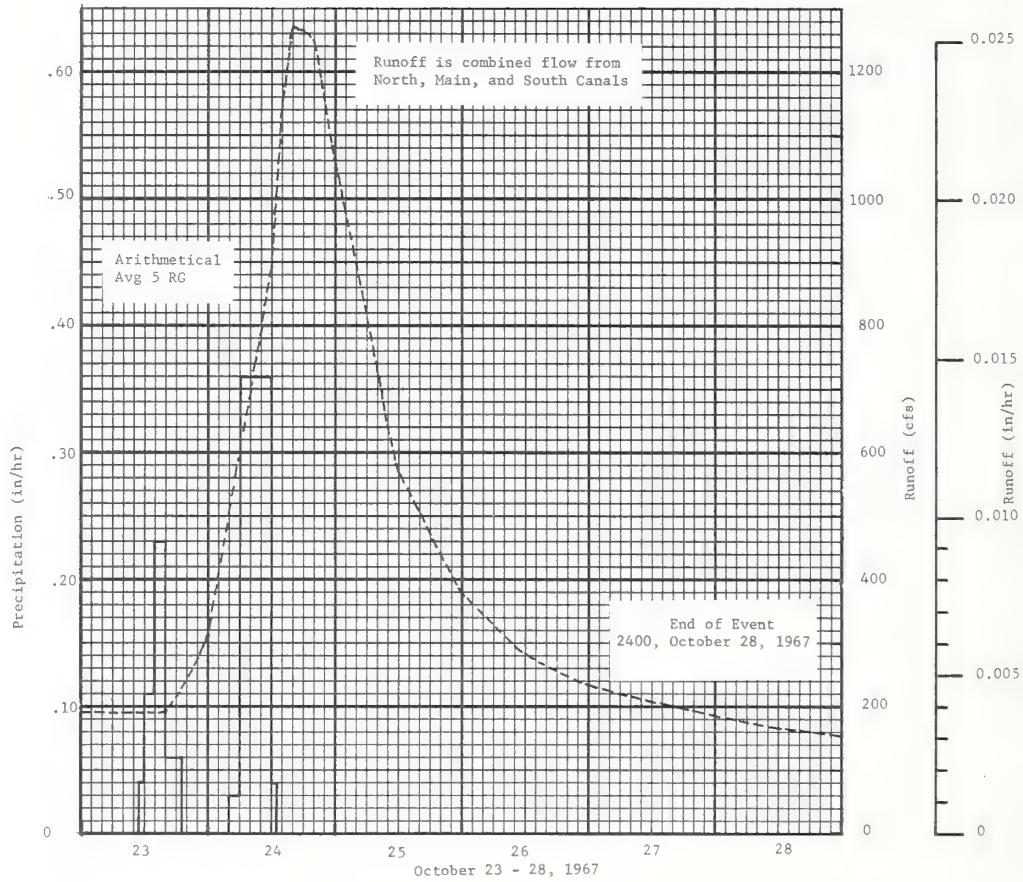
MONTHLY PRECIPITATION AND RUNOFF ^{1/2/} (inches)						VERO BEACH, FLORIDA (NORTH, MAIN & SOUTH CANALS) WATERSHED W-1 8.1 AREA - 49,915 ACRES (78.0 SQ. MILES)												
MONTH		JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL				
1967	P	1.53	2.91	1.34	.42	.30	7.00	5.48	5.99	3.62	6.55	.45	1.73	37.32				
	Q	1.15	1.28	1.17	1.02	.71	1.77	2.53	2.75	1.54	2.47	1.23	1.41	19.03				
STA AV ^{3/}	P	2.19	3.09	3.49	3.26	3.32	6.16	5.71	5.90	7.94	6.54	2.16	1.51	51.27				
(51-67)	Q	1.47	1.51	1.79	1.43	1.27	2.35	2.09	2.26	3.96	4.11	1.71	1.31	25.26				
MEAN P ^{4/}																		
67 YR		2.30	2.58	2.97	3.30	4.16	5.93	5.53	5.57	7.90	7.33	2.65	2.08	52.30				
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																		
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL															
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS			
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME		
1967			10-24	.025	10-24	.025	10-24	.050	10-24	.150	10-24	.276	10-24	.456	10-24	.650	10-23	1.13
MAXIMUMS FOR PERIOD OF RECORD																		
1951 TO	9-24	.106	9-24	.106	9-24	.211	9-24	.623	9-24	1.23	9-23	2.37	9-23	4.51	9-22	13.31		
1967	1963		1963		1963		1963		1963		1963		1960		1960			
NOTES: Watershed conditions: citrus groves, 48%; improved pasture, 30%; unimproved range and forest, 5%; urban development, 17%. 1/ Precipitation Thiessen weighted using 5 gages. 2/ Runoff data furnished by U. S. Geological Survey. Artesian irrigation inflow included in runoff. 3/ Precipitation and runoff records began April 1951. 4/ Mean P based on 67-yr (1901-1967) U.S. Weather Bureau record period at Fort Pierce No. 1, Fla. Missing records for July 1933 and for Feb. 1950 estimated from nearby station.																		
1967 DAILY PRECIPITATION (inches)						VERO BEACH, FLORIDA							WATERSHED W-1 8.1					
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC						
1	.00	.00	.00	.00	.00	.00	.32	.59	.00	.89	.00	.00						
2	.00	.00	.00	.00	.00	.65	.21	.29	.21	.00	.00	.00						
3	.12	.00	.51	.00	.00	.35	.53	.56	.71	.00	.00	.00						
4	.39	.00	.00	.00	.00	.00	.18	.04	.26	.00	.00	.00						
5	.00	.00	.00	.00	.00	.01	.12	1.91	.00	.65	.00	.00						
6	.00	.00	.00	.00	.00	.00	.19	.00	.07	.74	.00	.00						
7	.00	.21	.00	.00	.00	.02	.26	.49	.09	.12	.00	.00						
8	.00	.02	.41	.00	.00	.15	.01	.02	.29	.00	.00	.00						
9	.00	.44	.00	.00	.06	.29	.01	.18	.96	.19	.00	.00						
10	.00	.00	.00	.00	.00	.35	.00	.40	.00	.00	.00	.00						
11	.01	.35	.00	.00	.00	.02	.00	.13	.00	.00	.00	.00						
12	.00	.19	.00	.00	.00	.00	.00	.19	.00	.00	.02	.05						
13	.00	.06	.00	.00	.00	.32	.05	.18	.22	.00	.02	.04						
14	.00	.00	.00	.00	.00	.05	.31	.49	.00	.29	.00	.00						
15	.11	.00	.00	.00	.00	.17	.11	.00	.00	.00	.00	.00						
16	.01	.00	.00	.00	.00	.49	.42	.00	.00	.00	.09	.00						
17	.00	.00	.00	.00	.00	.24	.00	.00	.16	.47	.00	.00						
18	.26	.00	.04	.00	.00	.36	.28	.00	.00	.00	.00	.00						
19	.00	.00	.09	.36	.00	.26	.00	.00	.00	.00	.00	.00						
20	.00	.00	.02	.00	.00	.00	.00	.00	.00	.00	.00	.00						
21	.00	1.36	.00	.00	.00	.11	.00	.00	.00	.00	.00	.00						
22	.00	.28	.00	.00	.00	1.16	.25	.00	.04	.00	.00	.00						
23	.00	.00	.00	.00	.24	.32	.10	.05	.00	.92	.00	.07						
24	.02	.00	.00	.00	.00	.00	1.21	.00	.00	2.27	.00	.00						
25	.01	.00	.00	.00	.00	.00	.09	.16	.00	.00	.29	.00						
26	.60	.00	.00	.06	.00	.00	.25	.15	.09	.00	.00	.00						
27	.00	.00	.01	.00	.00	.00	.00	.00	.07	.00	.00	.00						
28	.00	.00	.07	.00	.00	.37	.56	.00	.19	.00	.00	.63						
29	.00	.00	.05	.00	.00	.27	.00	.00	.22	.01	.03	.00						
30	.00	-----	.13	.00	.00	1.04	.02	.09	.04	.00	.00	.00						
31	.00	-----	.01	-----	.00	-----	.00	.07	-----	.00	-----	.00						
TOTAL	1.53	2.91	1.34	0.42	0.30	7.00	5.48	5.99	3.62	6.55	0.45	1.73						
STA AV	2.19	3.09	3.49	3.26	3.32	6.16	5.71	5.90	7.94	6.54	2.16	1.51						
NOTES: THIESSEN WEIGHTED RAINFALL USING 5 GAGES. STA AV COVERS PERIOD FROM JULY 1, 1951 THROUGH 1967.																		

1967 MEAN DAILY DISCHARGE (cfs)						VERO BEACH, FLORIDA (MAIN, NORTH, SOUTH CANALS) WATERSHED W-1 8.1						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	75.3	60.6	78.0	126.3	51.0	16.7	354.0	122.0	33.2	186.0	88.8	127.1
2	74.2	37.9	76.2	142.6	56.0	20.9	240.0	227.0	32.0	285.0	81.6	95.9
3	74.0	54.0	77.9	95.9	47.0	89.0	187.0	192.0	69.4	198.0	58.2	84.3
4	104.0	54.2	84.0	48.9	33.9	228.0	266.0	263.0	155.0	137.4	39.0	77.2
5	101.0	55.8	81.2	25.1	24.9	152.0	251.0	447.0	281.0	123.3	58.1	68.9
6	109.6	75.8	79.2	34.3	37.4	147.0	263.0	735.0	207.0	138.6	87.2	67.7
7	113.6	77.8	75.2	48.9	61.0	56.4	238.0	381.0	159.0	144.0	98.1	69.8
8	98.2	71.0	83.0	41.3	72.0	32.2	271.0	335.0	116.8	133.0	117.2	104.5
9	69.8	156.0	97.0	72.2	62.0	57.0	195.0	227.0	181.0	120.0	107.5	111.3
10	53.4	116.0	76.0	77.0	61.0	65.8	149.0	222.0	207.0	124.0	88.7	87.3
11	72.4	88.3	73.0	83.8	57.0	79.0	128.0	244.0	158.0	114.0	26.2	78.5
12	77.4	90.8	69.0	89.0	51.7	84.0	106.0	219.0	128.0	106.7	73.8	350.0
13	65.4	147.0	69.0	90.0	43.7	83.0	67.4	193.0	118.0	91.8	102.8	204.0
14	22.4	129.0	69.6	96.0	37.7	85.0	66.6	196.0	121.0	83.0	66.8	72.6
15	22.8	89.3	67.2	83.0	41.7	67.0	70.8	257.0	116.0	84.0	26.0	112.3
16	108.2	86.8	83.8	52.9	35.6	239.0	167.0	185.0	109.0	85.0	25.2	101.7
17	69.8	80.8	77.8	51.0	30.9	223.6	200.0	153.0	105.0	86.0	37.0	94.2
18	37.2	76.0	70.8	84.0	31.8	104.0	124.0	142.0	110.0	103.0	69.6	82.0
19	98.8	78.5	71.8	94.0	29.8	117.2	96.6	126.0	103.8	133.0	102.0	74.6
20	116.2	98.0	73.2	147.0	34.4	58.0	80.2	105.8	97.0	99.7	141.0	58.2
21	77.3	119.8	78.2	101.2	40.4	29.8	80.3	85.4	89.8	77.4	130.0	65.2
22	81.9	233.0	91.6	85.4	42.2	313.0	71.7	64.0	49.1	72.4	118.1	74.2
23	70.9	121.2	93.0	96.5	42.8	407.0	121.0	38.4	36.6	150.0	110.4	70.4
24	83.8	114.0	69.7	55.8	100.0	267.0	236.0	60.4	36.4	759.0	146.3	67.7
25	62.0	93.5	68.7	29.8	121.0	170.0	321.0	58.6	52.0	604.0	117.1	63.5
26	49.2	87.5	87.3	22.6	48.5	78.0	214.0	70.8	40.8	276.0	92.4	63.7
27	98.0	118.0	101.6	29.6	49.8	16.3	168.0	76.0	46.4	189.0	93.8	63.9
28	72.0	80.8	26.0	29.4	43.0	16.6	149.0	162.0	60.0	150.0	94.4	77.9
29	68.2	-----	53.9	45.8	40.8	74.6	183.0	86.0	144.0	129.0	92.9	107.3
30	93.2	-----	124.0	52.0	34.9	332.0	138.0	54.0	61.0	109.0	89.5	100.7
31	99.8	-----	121.3	-----	25.9	-----	106.0	32.4	-----	93.1	-----	88.5
MEAN	78.1	96.1	79.0	71.0	48.0	123.6	171.2	185.8	107.4	167.1	86.0	95.7
INCHES	1.15	1.28	1.17	1.02	0.71	1.77	2.53	2.75	1.54	2.47	1.23	1.41

NOTES: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .0004769. DAILY DISCHARGE IS COMBINED FLOWS OF NORTH, MAIN, AND SOUTH CANALS FROM RECORDS OF U.S. GEOLOGICAL SURVEY. RUNOFF SUBJECT TO CONTROL.

1967			SELECTED RUNOFF EVENT				VERO BEACH, FLORIDA (MAIN, NORTH, SOUTH CANALS) WATERSHED W-1 8.1						
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF						
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)			
10-23	2/.03	3/.05	Event of October 23 - 28, 1967				10-23	1600	192	.0000			
			10-23	5 RG	AVG 1/	.00							
				1100	.00						.04		
				1200	.04								
				1400	.11							.26	
				1600	.23								.72
			1900	.06	.90								
			10-24	0400		.00					.90		
				0600		.03								.96
				1200		.36						3.12	
1300	.04	3.16											
Watershed conditions: Approximate land use: (from SCS) 48% in citrus and cropland 30% in improved pasture 5% in range and forest 17% miscel. (urban development)													
10-25							10-25	1200	573	.6384			
								2400	379	.7524			
								10-26	1200	282	.8316		
		10-27						2400	234	.8928			
1200	204		.9456										
2400	183		.9912										
10-28						10-28	1200	164	1.032				
							2400	4/ 156	1.070				

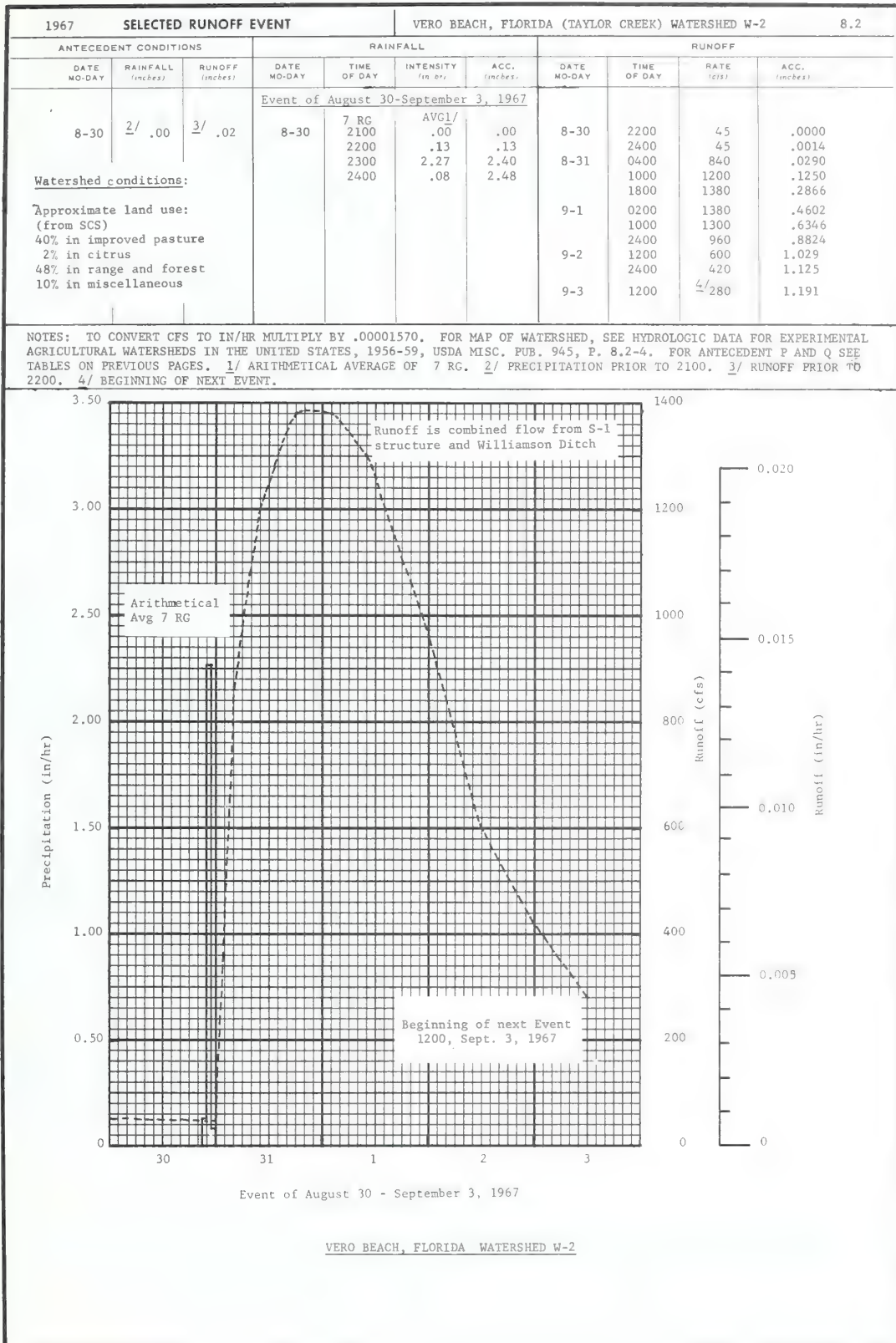
NOTES: TO CONVERT CFS TO IN/HR MULTIPLY BY .0001987. FOR MAP OF WATERSHED SEE PAGE 8.1-7 IN SELECTED RUNOFF EVENTS FROM SMALL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, USDA, ARS, JAN. 1960. FOR 30-DAY ANTECEDENT P AND Q SEE TABLE ABOVE AND ON PREVIOUS PAGE. 1/ PRECIPITATION IS ARITHMETICAL AVERAGE OF 5 RG. 2/ RAINFALL PRIOR TO 1100. 3/ RUNOFF PRIOR TO 1600. 4/ END OF EVENT.



VERO BEACH, FLORIDA WATERSHED W-1

MONTHLY PRECIPITATION AND RUNOFF ^{1/2/} (inches)							VERO BEACH, FLORIDA (TAYLOR CREEK) WATERSHED W-2 8.2 AREA - 63,170 ACRES (98.7 SQ. MILES)																	
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL										
1967	P	.71	2.94	.89	.16	.11	13.50	8.57	10.88	5.38	3.58	.36	2.29	49.37										
	3/Q	.12	.16	.14	.06	.02	.54	4.23	3.29	2.30	1.41	.21	.16	12.64										
	STA AV	1.94	2.57	3.05	2.30	3.90	8.13	6.31	6.80	6.59	3.88	1.12	1.64	48.23										
	(55-67) Q	.42	.50	.86	.20	.32	1.56	1.85	2.11	2.99	2.00	2.37	.15	15.33										
MEAN P 4/		1.63	1.92	2.65	3.22	3.75	7.18	6.06	6.05	7.03	4.80	1.62	1.47	47.38										
49 YR																								
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																								
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL																					
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS									
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME								
1967	8-31	.022	8-31	.022	8-31	.044	8-31	.132	8-31	.260	8-31	.492	8-31	.878	8-31	1.78								
MAXIMUMS FOR PERIOD OF RECORD																								
1955 TO 1967	10-16 1956	.11	10-16 1956	.11	10-16 1956	.21	10-16 1956	.62	10-16 1956	1.23	10-16 1956	2.28	10-16 1956	4.16	10-16 1956	8.03								
Notes: Watershed conditions: range and forest, 48%; improved pasture, 40%; citrus, 2%; miscellaneous, 10%. 1/ Precipitation Thiessen weighted using 7 gages. 2/ Runoff data furnished by U.S. Geological Survey. 3/ Precipitation and runoff records began July 1955. 4/ Mean P based on 49-yr (1919-1967) U.S. Weather Bureau record period at Okeechobee Hurricane Gate 6, Fla.																								
1967 DAILY AIR TEMPERATURE (degrees F)							VERO BEACH, FLORIDA (TAYLOR CREEK) WATERSHED W-2 8.2																	
DAY	JAN		FEB		MAR		APR		MAY		JUNE		JULY		AUG		SEPT		OCT		NOV		DEC	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	84	62	78	51	79	57	78	63	82	50	98	65	93	74	90	71	93	72	86	71	84	62	85	62
2	84	62	77	50	76	54	78	57	85	59	99	65	89	73	90	72	90	71	86	67	83	68	82	61
3	84	67	80	56	76	59	80	55	88	67	93	68	90	76	92	74	91	71	82	65	81	61	78	67
4	85	69	82	62	81	57	84	51	90	56	88	67	91	73	90	73	91	69	85	64	83	60	83	44
5	71	37	76	45	84	61	87	52	87	63	91	68	89	72	91	72	89	69	86	69	81	58	75	63
6	63	34	76	45	84	64	85	52	89	62	94	69	89	76	88	72	92	71	85	69	76	55	75	60
7	72	53	80	67	85	70	87	57	92	69	92	65	88	75	90	73	90	70	80	68	76	52	77	53
8	79	61	77	56	87	64	89	54	92	70	94	65	88	74	87	72	90	71	84	64	75	57	78	54
9	78	64	71	64	83	66	92	64	95	70	91	68	91	73	87	70	89	74	90	69	75	53	81	59
10	82	55	76	37	84	66	80	57	94	54	94	68	90	72	88	71	88	72	81	72	76	54	84	63
11	81	52	67	48	86	61	86	57	91	66	92	70	92	73	90	73	93	74	87	59	77	62	82	70
12	69	51	78	67	87	60	90	60	93	68	90	70	92	74	85	74	91	75	87	63	78	64	84	65
13	72	54	85	62	89	60	89	60	97	63	90	73	93	73	91	73	93	74	85	65	82	60	79	67
14	78	53	64	45	85	53	83	59	100	68	85	69	90	74	89	71	85	72	84	65	82	52	88	64
15	82	63	73	47	84	49	85	55	96	64	87	68	91	72	90	70	88	70	83	62	82	52	85	63
16	77	60	76	53	86	64	88	61	95	68	91	70	91	72	92	72	87	69	84	59	77	54	84	63
17	71	49	80	58	76	49	90	61	97	69	88	68	90	70	89	73	89	71	89	65	79	57	81	61
18	80	59	80	55	79	51	89	62	87	54	86	71	91	73	87	73	92	71	90	69	80	62	81	60
19	78	60	84	53	78	50	92	67	90	54	87	70	92	72	90	74	92	69	81	54	80	51	84	60
20	79	54	82	55	72	56	88	65	88	53	89	69	91	73	87	72	90	72	79	57	77	46	84	61
21	78	53	84	65	77	49	84	56	90	62	90	67	90	75	87	73	89	70	81	59	81	50	83	59
22	77	56	75	58	82	61	85	56	90	68	91	72	90	75	90	71	92	71	84	60	78	48	82	58
23	78	59	73	54	82	56	88	69	88	68	90	70	91	71	89	72	90	68	85	69	77	58	83	50
24	78	58	68	37	82	49	89	67	89	64	92	68	91	71	89	74	90	67	77	68	83	60	58	37
25	79	56	69	38	83	53	93	69	84	54	91	70	90	73	90	73	89	68	83	64	84	65	70	51
26	83	61	55	29	82	54	90	70	87	50	92	71	92	74	89	72	92	68	88	66	85	68	75	51
27	83	66	62	37	81	59	91	68	95	61	92	74	92	73	90	72	88	69	86	64	88	64	73	49
28	82	43	70	44	81	65	91	56	99	66	94	72	93	73	92	72	85	73	86	60	85	64	77	66
29	62	32	---	---	75	63	84	53	100	67	93	72	93	72	92	71	81	72	86	62	81	58	73	49
30	68	33	---	---	79	62	79	52	96	67	93	71	92	71	91	70	78	67	84	63	81	61	62	43
31	72	38	---	---	80	59	---	---	96	71	---	---	92	70	92	68	---	---	85	66	---	---	74	47
IV.	71	54	75	51	81	58	87	60	92	63	91	69	91	73	90	72	89	71	84	64	80	58	79	57
MEAN	62.5	63.0	69.5	73.5	77.5	80.0	82.0	81.0	80.0	80.0	82.0	81.0	81.0	80.0	80.0	80.0	80.0	74.0	74.0	69.0	69.0	68.0	68.0	68.0
STA AV	74	51	76	54	79	57	84	63	88	68	90	74	91	75	92	75	90	74	86	66	80	61	74	52
NOTES: TEMPERATURE DATA FROM R-3, READINGS TAKEN DAILY. STA AV COVERS PERIOD FROM JULY 1, 1956 THROUGH 1967.																								

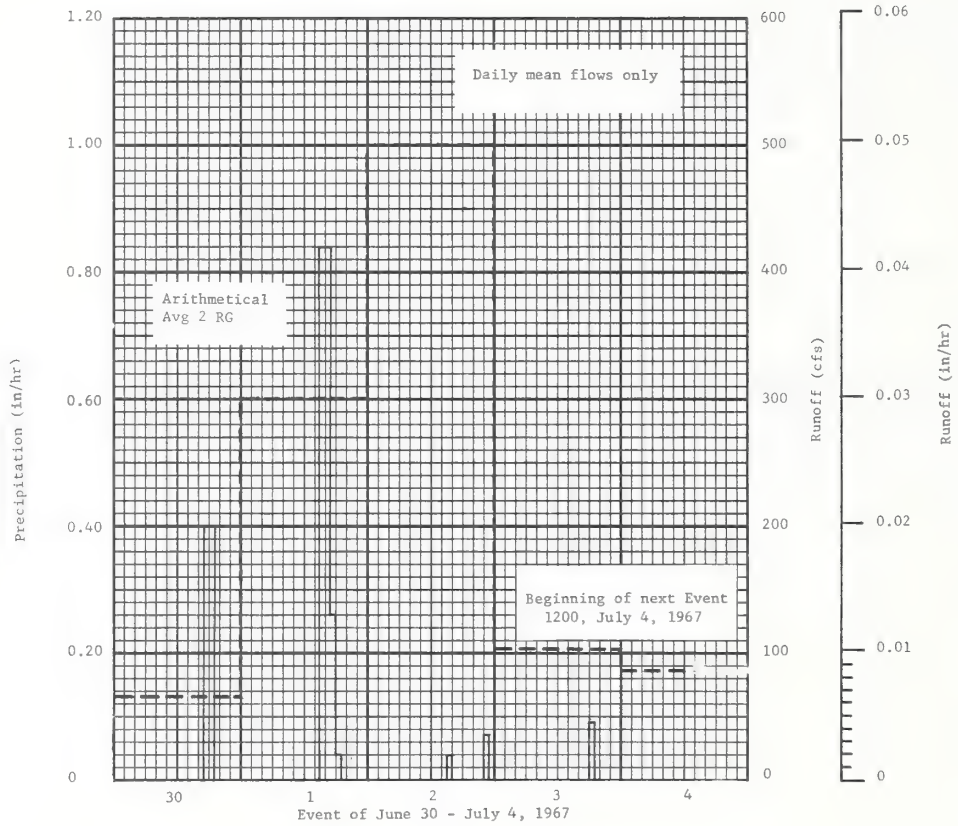
1967 DAILY PRECIPITATION (inches)						VERO BEACH, FLORIDA (TAYLOR CREEK) WATERSHED W-2 8.2						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.00	.00	.00	.00	.00	.00	1.43	.72	.00	.77	.00	.00
2	.00	.00	.00	.00	.00	1.95	.13	.00	.00	.00	.14	.00
3	.06	.00	.17	.00	.00	1.12	.47	.15	.29	.01	.00	.00
4	.17	.00	.00	.00	.00	.04	.65	.18	.81	.00	.00	.00
5	.00	.00	.00	.00	.00	1.01	.00	1.40	.25	.34	.00	.00
6	.00	.00	.00	.00	.00	.84	.50	.32	.00	.36	.00	.00
7	.00	.06	.01	.00	.00	.40	.45	.01	.05	.00	.00	.00
8	.00	.06	.44	.00	.00	.25	.36	.72	.00	.00	.00	.00
9	.00	.58	.12	.00	.00	.03	.20	.00	.11	.23	.00	.00
10	.00	.00	.00	.00	.00	.55	.00	.00	.00	.01	.00	.00
11	.00	.36	.00	.00	.00	.03	.00	.40	.48	.03	.00	1.30
12	.00	.11	.00	.00	.00	.02	.32	.19	.08	.00	.00	.10
13	.00	.08	.00	.00	.00	.75	.63	.41	.98	.00	.00	.02
14	.00	.00	.00	.00	.00	.27	1.39	.03	.02	.09	.00	.00
15	.15	.00	.00	.00	.00	.09	.34	.08	.00	.00	.00	.00
16	.04	.00	.00	.00	.01	.65	.25	.30	.00	.00	.22	.00
17	.00	.00	.00	.03	.00	.21	.31	.94	.14	.05	.00	.00
18	.08	.00	.00	.00	.00	.45	.00	.06	.00	.00	.00	.00
19	.00	.00	.01	.13	.00	.18	.14	.76	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.09	.15	.52	.00	.00	.00	.00
21	.00	1.34	.00	.00	.00	.00	.26	.90	.03	.00	.00	.00
22	.00	.35	.00	.00	.10	.52	.20	.12	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	1.18	.08	.00	.00	.41	.00	.05
24	.00	.00	.00	.00	.00	.02	.16	.09	.00	1.21	.00	.00
25	.21	.00	.00	.00	.00	.00	.00	.10	.41	.07	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.59	.00	.00	.00	.00	.00	.00
28	.00	.00	.05	.00	.00	.10	.00	.00	1.37	.00	.00	.82
29	.00	.00	.01	.00	.00	.53	.00	.03	.36	.00	.00	.00
30	.00	-----	.05	-----	.00	1.63	.15	2.45	.00	.00	.00	.00
31	.00	-----	.03	-----	.00	-----	.00	.00	-----	.00	-----	.00
TOTAL	0.71	2.94	0.89	0.16	0.11	13.50	8.57	10.88	5.38	3.58	0.36	2.29
STA AV	1.94	2.57	3.05	2.30	3.90	8.13	6.31	6.80	6.59	3.88	1.12	1.64
NOTES: THIESSEN WEIGHTED RAINFALL - USING 7 GAGES. STA AV BASED ON PERIOD JULY 1, 1955 THROUGH 1967.												
1967 MEAN DAILY DISCHARGE (cfs)						VERO BEACH, FLORIDA (TAYLOR CREEK) WATERSHED W-2 8.2						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	11.0	8.5	14.0	8.0	2.3	1.4	713.0	12.0	1260.0	232.0	34.0	11.0
2	11.0	8.7	12.0	7.6	2.3	3.1	975.0	18.0	602.0	533.0	31.0	11.0
3	12.0	8.7	12.0	8.0	2.3	4.7	562.0	32.0	278.0	391.0	32.0	12.0
4	14.0	8.1	15.0	8.5	2.3	2.5	332.0	37.0	199.0	230.0	31.0	11.0
5	11.0	7.6	13.0	7.6	2.3	7.7	463.0	59.0	441.0	131.0	26.0	12.0
6	11.0	6.4	12.0	7.4	1.9	8.6	371.0	405.0	549.0	134.0	23.0	11.0
7	11.0	8.0	12.0	7.4	1.9	20.0	361.0	254.0	226.0	208.0	21.0	11.0
8	10.0	9.1	13.0	7.6	1.9	58.0	378.0	196.0	171.0	186.0	19.0	10.0
9	11.0	11.0	17.0	7.0	2.3	28.0	363.0	251.0	122.0	146.0	18.0	10.0
10	11.0	14.0	16.0	7.0	2.3	16.0	538.0	165.0	94.0	151.0	19.0	10.0
11	11.0	12.0	16.0	7.6	2.3	15.0	390.0	118.0	137.0	113.0	18.0	14.0
12	10.0	16.0	15.0	6.4	2.3	17.0	261.0	141.0	125.0	91.0	18.0	23.0
13	10.0	16.0	14.0	5.9	1.9	20.0	258.0	135.0	102.0	74.0	17.0	23.0
14	10.0	13.0	12.0	5.0	1.9	31.0	566.0	175.0	364.0	64.0	16.0	19.0
15	11.0	12.0	13.0	3.8	1.9	28.0	920.0	128.0	329.0	64.0	16.0	16.0
16	12.0	12.0	11.0	3.8	2.3	27.0	869.0	103.0	182.0	59.0	16.0	15.0
17	12.0	12.0	9.6	3.1	2.3	41.0	675.0	232.0	111.0	32.0	16.0	15.0
18	12.0	12.0	10.0	3.1	2.3	46.0	490.0	553.0	89.0	13.0	16.0	14.0
19	11.0	12.0	8.5	3.1	1.7	52.0	352.0	552.0	70.0	12.0	15.0	14.0
20	11.0	11.0	9.1	3.1	1.7	48.0	249.0	706.0	51.0	12.0	15.0	14.0
21	9.9	15.0	9.3	2.9	1.7	40.0	190.0	647.0	43.0	26.0	14.0	13.0
22	9.9	47.0	9.7	2.9	2.3	36.0	194.0	744.0	38.0	26.0	14.0	13.0
23	9.1	50.0	9.7	2.9	2.3	38.0	218.0	876.0	34.0	26.0	13.0	13.0
24	8.6	30.0	9.1	2.9	1.9	217.0	155.0	448.0	28.0	37.0	13.0	11.0
25	8.6	20.0	9.1	2.5	1.7	153.0	115.0	110.0	26.0	167.0	13.0	11.0
26	9.7	16.0	9.1	2.5	1.7	82.0	81.0	146.0	39.0	205.0	13.0	11.0
27	10.0	14.0	8.2	2.5	1.7	52.0	59.0	106.0	34.0	125.0	13.0	12.0
28	9.7	14.0	9.3	2.5	1.7	122.0	50.0	79.0	38.0	88.0	12.0	16.0
29	7.6	-----	9.3	2.5	1.7	96.0	39.0	63.0	158.0	64.0	12.0	21.0
30	7.0	-----	9.1	2.5	1.7	104.0	32.0	53.0	175.0	49.0	12.0	18.0
31	6.8	-----	8.5	-----	1.7	-----	16.0	1180.0	-----	41.0	-----	15.0
MEAN	10.3	15.1	11.4	4.9	2.0	47.2	362.4	281.4	203.8	120.2	18.2	13.9
INCHES	0.12	0.16	0.14	0.06	0.02	0.54	4.23	3.29	2.30	1.41	0.21	0.16
NOTES: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .0003768. DISCHARGE IS COMBINED FLOW FROM WILLIAMSON DITCH AND S-1 STRUCTURE. RUNOFF DATA FURNISHED BY THE U. S. GEOLOGICAL SURVEY. DISCHARGE MEASUREMENTS GENERALLY MADE ONCE A WEEK.												



MONTHLY PRECIPITATION ^{1/} AND RUNOFF ^{2/} (inches)						VERO BEACH, FLORIDA (TAYLOR CREEK) WATERSHED W-3 8.3 AREA—10,050 ACRES (15.7 SQ. MILES)										
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	P	.49	3.12	.29	.32	.00	13.33	9.12	8.42	4.69	3.38	.65	2.40	46.21		
	Q	.03	.07	.06	.00	.00	1.56	4.91	3.33	1.84	.71	.29	.17	12.97		
STA AV	P	1.85	2.43	3.06	2.65	3.93	7.56	6.78	6.53	6.19	3.82	1.02	1.63	47.45		
(55-67)	Q	.38	.33	.84	.17	.24	1.14	1.57	1.92	2.94	1.74	1.17	.11	12.55		
MEAN P	4/	1.63	1.92	2.65	3.22	3.75	7.18	6.06	6.05	7.03	4.80	1.62	1.47	47.38		
49 YR																
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967											7-2	1.18	7-1	1.89	6-28	3.05
INDETERMINATE																
MAXIMUMS FOR PERIOD OF RECORD																
1955 TO	10-15	.25	10-15	.24	10-15	.47	10-15	1.35	10-15	2.55	10-15	3.14	10-15	6.21	10-15	8.67
1967	1956		1956		1956		1956		1956		1956		1956		1956	
NOTES Watershed conditions: range and forest, 55%; improved pasture, 35%; miscellaneous, 10%. 1/ Precipitation Thiessen weighted using 2 gages. 2/ Runoff data furnished by U. S. Geological Survey. 3/ Precipitation and runoff records began July 1955. 4/ Mean P based on 49-yr (1919-1967) U.S. Weather Bureau record period at Okeechobee Hurricane Gate 6, Fla.																

1967 DAILY PRECIPITATION (inches)						VERO BEACH, FLORIDA WATERSHED W-3 8.3						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.00	.00	.00	.00	.00	.00	2.09	.35	.00	.26	.00	.00
2	.00	.00	.00	.00	.00	2.02	.08	.00	.00	.00	.44	.00
3	.00	.00	.13	.00	.00	1.42	.04	.57	.47	.03	.00	.00
4	.11	.00	.00	.00	.00	.00	.96	.00	.54	.00	.00	.00
5	.00	.00	.00	.00	.00	.85	.00	1.48	.32	.27	.00	.00
6	.00	.00	.00	.00	.00	1.53	.17	.30	.00	.15	.00	.00
7	.00	.01	.00	.00	.00	.00	.47	.02	.00	.00	.00	.00
8	.00	.11	.08	.00	.00	.03	.36	.55	.00	.00	.00	.00
9	.00	.90	.00	.00	.00	.00	.00	.00	.00	.29	.00	.00
10	.00	.00	.00	.00	.00	.02	.00	.00	.00	.00	.00	.00
11	.00	.40	.00	.00	.00	.00	.00	.24	.00	.05	.00	1.35
12	.00	.07	.00	.00	.00	.09	.00	.11	.10	.00	.00	.06
13	.00	.02	.00	.00	.00	2.37	.99	.45	1.09	.00	.00	.02
14	.00	.00	.00	.00	.00	.32	.42	.06	.00	.00	.00	.00
15	.11	.00	.00	.00	.00	.09	1.17	.01	.00	.00	.00	.00
16	.05	.00	.00	.00	.00	.37	.83	.09	.00	.00	.21	.00
17	.00	.00	.00	.15	.00	.13	.41	.40	.28	.10	.00	.00
18	.05	.00	.00	.00	.00	.50	.00	.00	.00	.00	.00	.00
19	.00	.00	.03	.17	.00	.35	.19	.06	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.20	.00	1.22	.00	.00	.00	.00
21	.00	1.27	.00	.00	.00	.00	.11	.42	.00	.00	.00	.00
22	.00	.34	.00	.00	.00	.00	.03	.09	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	1.22	.17	.00	.00	.47	.00	.05
24	.00	.00	.00	.00	.00	.00	.35	.40	.00	1.76	.00	.00
25	.17	.00	.00	.00	.00	.00	.00	.19	.86	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.72	.00	.02	.00	.00	.00	.00
28	.00	.00	.03	.00	.00	.05	.00	.00	.82	.00	.00	.92
29	.00	.00	.01	.00	.00	.26	.00	.00	.21	.00	.00	.00
30	.00		.00	.00	.00	.79	.28	1.39	.00	.00	.00	.00
31	.00		.01		.00		.00	.00		.00		.00
TOTAL	0.49	3.12	0.29	0.32	0.00	13.33	9.12	8.42	4.69	3.38	0.65	2.40
STA AV	1.85	2.43	3.06	2.65	3.93	7.56	6.78	6.53	6.19	3.82	1.02	1.63
NOTES THIESSEN WEIGHTED AVERAGE OF 2 GAGES. STA AV IS BASED ON PERIOD JULY 1, 1955 THROUGH 1967.												

1967 MEAN DAILY DISCHARGE (cfs)						VERO BEACH, FLORIDA (TAYLOR CREEK)				WATERSHED W-3		8.3
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.27	.23	1.4	.14	.0	.0	300.0	3.0	58.0	12.0	9.3	1.2
2	.30	.23	1.2	.13	.0	.0	500.0	3.4	33.0	14.0	8.5	1.2
3	.34	.23	1.2	.13	.0	1.4	102.0	3.8	30.0	11.0	10.0	1.0
4	.44	.23	1.2	.13	.0	4.8	87.0	12.0	38.0	8.4	9.3	1.0
5	.44	.23	1.2	.12	.0	3.2	122.0	23.0	78.0	8.1	7.9	1.0
6	.44	.23	.96	.09	.0	3.8	44.0	160.0	91.0	8.7	7.0	1.0
7	.40	.21	.88	.09	.0	4.3	32.0	57.0	36.0	10.0	5.9	1.0
8	.40	.25	.80	.08	.0	3.4	41.0	43.0	23.0	8.7	5.4	1.0
9	.40	.68	.80	.08	.0	2.4	28.0	37.0	17.0	8.4	4.8	1.8
10	.40	1.2	.80	.06	.0	2.0	20.0	22.0	14.0	13.0	4.6	2.0
11	.40	1.0	.80	.05	.0	1.8	16.0	16.0	11.0	9.9	4.3	2.6
12	.40	1.2	.80	.03	.0	1.4	10.0	14.0	9.0	8.4	4.3	6.2
13	.40	1.2	.80	.02	.0	9.7	7.2	18.0	29.0	8.1	4.1	5.1
14	.34	1.2	.80	.01	.0	14.0	70.0	24.0	86.0	6.2	3.6	3.8
15	.34	1.0	.72	.0	.0	7.5	57.0	15.0	37.0	.5	2.8	3.6
16	.37	.96	.72	.0	.0	5.9	179.0	13.0	26.0	3.2	2.4	3.4
17	.37	.96	.88	.0	.0	10.0	151.0	22.0	19.0	3.4	2.3	3.2
18	.37	.80	1.0	.0	.0	11.0	100.0	40.0	18.0	3.4	2.8	3.0
19	.40	.80	1.2	.0	.0	15.0	55.0	31.0	14.0	3.4	2.8	2.6
20	.40	.61	1.4	.0	.0	20.0	31.0	85.0	11.0	3.4	2.6	2.4
21	.37	.83	1.4	.0	.0	15.0	22.0	116.0	9.3	3.4	2.4	2.0
22	.37	3.8	1.0	.0	.0	10.0	16.0	102.0	8.4	2.0	2.0	1.8
23	.37	3.6	.80	.0	.0	50.0	13.0	53.0	8.4	2.4	1.8	1.4
24	.37	2.8	.52	.0	.0	100.0	13.0	35.0	8.1	11.0	1.6	1.0
25	.34	2.2	.32	.0	.0	80.0	13.0	29.0	8.1	36.0	1.6	1.0
26	.34	1.6	.25	.0	.0	60.0	14.0	26.0	9.9	29.0	1.6	1.0
27	.34	1.4	.21	.0	.0	45.0	10.0	18.0	8.1	20.0	1.6	1.0
28	.30	1.4	.19	.0	.0	60.0	6.6	14.0	7.8	14.0	1.6	1.8
29	.25	-----	.18	.0	.0	50.0	4.6	11.0	17.0	7.7	1.4	4.6
30	.23	-----	.16	.0	.0	65.0	3.6	12.0	16.0	12.0	1.2	3.8
31	.23	-----	.16	-----	.0	-----	3.2	347.0	-----	10.0	-----	3.2
MEAN	0.36	1.11	0.80	0.04	0.00	21.9	66.8	45.3	26.0	9.7	3.0	2.3
INCHES	0.03	0.07	0.06	0.00	0.00	1.56	4.91	3.33	1.84	0.71	0.29	0.17
NOTES: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY MULTIPLY BY .002368. RUNOFF DATA FURNISHED BY U.S. GEOLOGICAL SURVEY. RECORDS ARE GOOD. SOME DIVERSION DURING LOW FLOW FOR IRRIGATION.												
1967 SELECTED RUNOFF EVENT						VERO BEACH, FLORIDA (TAYLOR CREEK) WATERSHED W-3				8.3		
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF 1/					
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)		
6-30	2/ .00	3/ .11	Event of June 30 - July 4, 1967									
			6-30	2 RG	AVG 4/		6-30	1700	65	.000		
				1700	.00	.00						
				1900	.40	.80						
			7-1	1500	.00	.80	7-1	0000	300	.045		
				1700	.84	2.48						
				1800	.26	2.74						
			7-2	1900	.04	2.78	7-2	0000	500	1.941		
				1500	.00	2.78						
				1600	.04	2.82						
				2200	.00	2.82						
			7-3	2300	.07	2.89	7-4	0000	87	2.184		
				1800	.00	2.89						
				1900	.09	2.98						
			Watershed conditions: Approximate land use (from SCS) 35% in improved pasture 55% in range and forest 10% in miscellaneous									
NOTES: TO CONVERT CFS TO IN/HR MULTIPLY BY .00009868. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES 1956-59, USDA MISC. PUB. 945, P. 8.2-4. FOR 30-DAY ANTECEDENT P AND Q, SEE TABLES ON THIS AND PREVIOUS PAGE. 1/ RUNOFF COMPUTED ON BASIS OF ESTIMATED DAILY MEANS FOR TOTAL DAILY RUNOFF ONLY. TAINTER GATE OPENED TO INDETERMINATE HEIGHTS DURING EVENT. 2/ PRECIPITATION PRIOR TO 1700. 3/ RUNOFF PRIOR TO 1700. 4/ PRECIPITATION IS ARITHMETICAL AVERAGE, 2 RAIN GAGES. 5/ BEGINNING OF NEXT EVENT.												



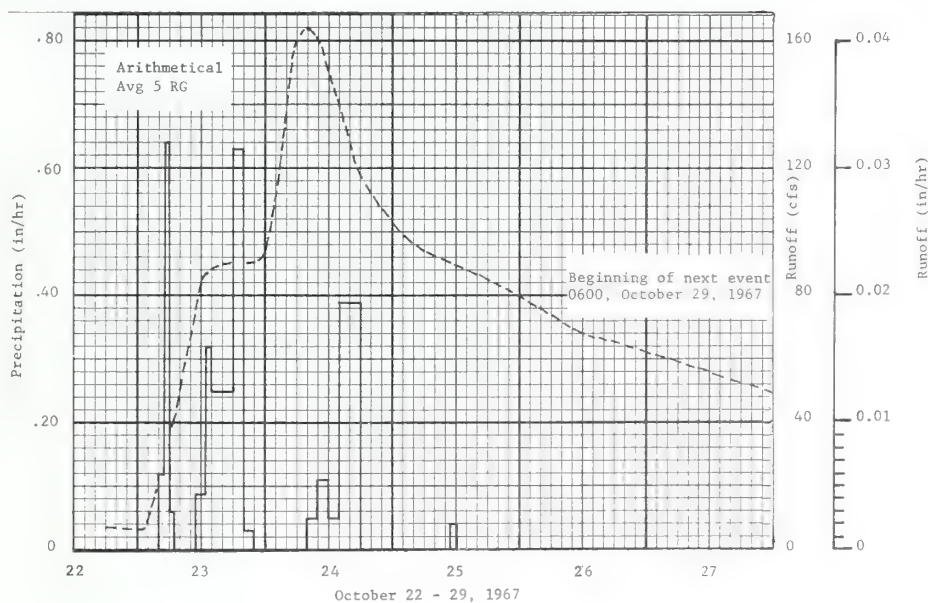
VERO BEACH, FLORIDA WATERSHED W-3

MONTHLY PRECIPITATION ^{1/} AND RUNOFF ^{2/} (inches)						VERO BEACH, FLORIDA (MONREVE RANCH) WATERSHED W-4 AREA - 3,970 ACRES (6.2 SQ. MILES)								8.4		
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	P ₃	.88	3.16	2.48	.47	1.84	9.69	8.71	6.27	3.75	13.21	1.65	1.25	53.36		
	I ⁻	.10	.24	.75	.63	1.37	.00	.00	.00	.00	.00	.00	.00	3.09		
	Q	.13	.16	.21	.22	.16	.75	2.40	2.40	.39	5.94	1.25	.30	14.31		
STA AV ^{4/} (61-67)I ⁻ (59-67)Q		2.20	2.96	2.24	2.67	4.67	8.08	6.97	7.19	7.75	7.72	2.04	2.01	56.50		
		.47	.40	.86	.95	.73	.28	.02	.03	.02	.02	.06	.19	4.03		
		.84	.64	.59	.68	.81	1.76	2.36	2.45	3.17	4.00	1.00	.58	18.88		
MEAN P ^{5/} 67 YR		2.30	2.58	2.97	3.30	4.16	5.93	5.53	5.57	7.90	7.33	2.65	2.08	52.30		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	10-24	.041	10-24	.041	10-24	.080	10-24	.235	10-24	.434	10-24	.792	10-24	1.33	10-23	3.11
MAXIMUMS FOR PERIOD OF RECORD																
1959 TO 1967	9-23 1960	.19	9-23 1960	.19	9-23 1960	.37	9-23 1960	1.02	9-23 1960	1.68	9-24 1960	2.33	9-23 1960	4.08	9-22 1960	9.20
NOTES: Watershed conditions: native range, 70%; improved pasture, 30%. 1/ Precipitation Thiessen weighted using 5 gages. 2/ Runoff data furnished by U. S. Geological Survey. 3/ (I) denotes pumped irrigation which augmented natural rainfall on area. 4/ Precipitation records began Jan. 1959, irrigation in Jan. 1960, and runoff records, July 1959. 5/ Mean P based on 67-yr (1901-1967) U.S. Weather Bureau record period at Fort Pierce No. 1, Fla.																
1967 DAILY PRECIPITATION (inches)						VERO BEACH, FLORIDA (MONREVE RANCH) WATERSHED W-4								8.4		
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC				
1	.00	.00	.00	.00	.00	.00	2.62	.21	.00	1.74	.00	.00				
2	.00	.00	.00	.00	.00	1.09	.13	.06	.00	.00	.00	.00				
3	.00	.00	.35	.00	.00	.45	1.01	.03	.19	.01	.00	.00				
4	.18	.00	.00	.00	.00	.01	.02	.44	.00	.00	.00	.00				
5	.00	.00	.00	.00	.00	.06	.26	.48	.13	3.74	.00	.00				
6	.00	.00	.00	.00	.00	.15	.53	.31	.00	.29	.00	.00				
7	.00	.02	.00	.00	.00	.68	.40	.02	.50	.00	.00	.00				
8	.00	.07	.68	.00	.00	.01	.00	.00	.00	.00	.00	.00				
9	.00	.57	.00	.00	.00	.43	.00	.46	.18	.38	.00	.00				
10	.00	.00	.00	.00	.00	.22	.00	.76	.00	.17	.00	.00				
11	.00	.07	.00	.00	.00	1.40	.00	.02	.00	.00	.07	1.05				
12	.00	.00	.00	.00	.00	.07	.00	.55	.00	.00	.01	.09				
13	.00	.06	.00	.00	.00	.05	.00	.21	1.83	.00	.00	.00				
14	.00	.00	.00	.00	.00	.01	.02	2.19	.02	.45	.00	.00				
15	.15	.00	.00	.00	.00	.26	.00	.12	.00	.00	.00	.00				
16	.05	.00	.00	.00	.53	1.57	1.47	.00	.00	.00	1.57	.00				
17	.00	.00	.00	.00	.00	1.21	.00	.00	.02	.58	.00	.00				
18	.23	.00	.04	.00	.00	.59	.00	.05	.00	.00	.00	.00				
19	.00	.00	.45	.47	.00	.15	.00	.00	.00	.00	.00	.00				
20	.03	.00	.00	.00	.00	.38	.00	.01	.00	.00	.00	.01				
21	.00	1.22	.00	.00	.17	.00	.00	.00	.00	.00	.00	.00				
22	.00	1.15	.00	.00	.66	.00	.00	.00	.02	.00	.00	.00				
23	.00	.00	.00	.00	.25	.52	.68	.17	.00	3.57	.00	.03				
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	2.04	.00	.00				
25	.00	.00	.00	.00	.00	.11	.00	.00	.05	.05	.00	.00				
26	.20	.00	.00	.00	.00	.12	.00	.12	.03	.00	.00	.00				
27	.04	.00	.00	.00	.00	.00	.02	.00	.32	.00	.00	.00				
28	.00	.00	.70	.00	.00	.00	1.24	.00	.03	.00	.00	.07				
29	.00	.00	.00	.00	.00	.08	.00	.00	.40	.19	.00	.00				
30	.00		.22	.00	.23	.07	.00	.06	.03	.00	.00	.00				
31	.00		.04		.00		.31	.00		.00						
TOTAL	0.88	3.16	2.48	0.47	1.84	9.69	8.71	6.27	3.75	13.21	1.65	1.25				
STA AV	2.20	2.96	2.24	2.67	4.67	8.08	6.97	7.19	7.75	7.72	2.04	2.01				
NOTES: THIESSEN WEIGHTED RAINFALL 5 GAGES. STA AV BASED ON PERIOD FROM JANUARY 1959 THROUGH 1967.																

1967 DAILY IRRIGATION (inches)						VERO BEACH, FLORIDA (MONREVE RANCH) WATERSHED W-4 8.4						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.05	.02	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.05	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.05	.00	.00	.08	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.12	.00	.00	.00	.00	.00	.00	.00
6	.04	.00	.00	.00	.12	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.05	.00	.00	.00	.00	.00	.00	.00
8	.00	.03	.00	.06	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.03	.07	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.12	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.12	.00	.06	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.12	.08	.12	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.08	.06	.12	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.12	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.05	.00	.12	.00	.00	.00	.00	.00	.00	.00
16	.00	.01	.10	.00	.10	.00	.00	.00	.00	.00	.00	.00
17	.00	.08	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	.07	.00	.07	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.07	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.02	.00	.03	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.04	.00	.03	.00	.00	.00	.00	.00	.00	.00
25	.06	.00	.07	.07	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.05	.08	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.12	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.08	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
30	.00	---	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	---	.00	---	.00	---	.00	---	.00	.00
TOTAL	0.10	0.24	0.75	0.63	1.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00
STA AV	0.47	0.40	0.86	0.95	0.73	0.28	0.02	0.03	0.02	0.02	0.06	0.19
NOTES: IRRIGATION COMPUTED FROM STAGE-LIFT CURVE AGAINST HOURS OF PUMP OPERATION. STA AV IS BASED ON PERIOD OF 1961 THROUGH 1967.												
1967 MEAN DAILY DISCHARGE (cfs)						VERO BEACH, FLORIDA (MONREVE RANCH) WATERSHED W-4 8.4						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.7	.6	1.1	.9	.6	.5	13.0	5.4	2.2	3.5	23.0	2.2
2	.6	.6	1.0	.8	.9	.5	34.0	5.4	1.9	8.4	16.0	1.9
3	.5	.5	1.0	1.4	1.6	.5	30.0	4.6	1.8	5.7	16.0	1.8
4	.6	.6	1.0	1.6	1.8	.5	36.0	5.1	1.7	4.9	8.8	1.7
5	.7	.8	.9	1.4	1.8	.4	32.0	8.4	1.6	42.0	9.2	1.6
6	.6	.7	.9	1.1	1.9	.4	32.0	10.0	1.4	65.0	8.4	1.6
7	.7	.7	.9	1.0	1.8	.4	35.0	10.0	1.4	42.0	7.2	1.6
8	.8	.6	.9	1.7	1.5	.4	28.0	8.4	1.7	37.0	6.0	1.5
9	.8	.7	.9	1.7	1.2	.4	22.0	8.0	1.7	30.0	5.4	1.5
10	.8	.8	1.0	1.4	1.0	.4	16.0	12.0	1.6	32.0	4.9	1.4
11	.7	.7	1.0	1.4	.7	.5	10.0	18.0	1.4	26.0	4.4	1.5
12	.7	.7	1.0	1.1	.6	2.2	8.0	15.0	1.2	22.0	4.2	1.8
13	.6	.7	1.0	1.6	.6	1.7	6.2	17.0	3.7	16.0	3.9	2.5
14	.6	.6	1.0	1.7	.6	2.3	4.9	33.0	7.6	16.0	3.5	2.5
15	.7	.6	.9	1.4	.7	1.0	5.5	60.0	6.0	16.0	3.0	2.2
16	.8	.6	1.7	1.2	.7	4.0	5.3	42.0	4.6	13.0	3.5	2.0
17	.7	.7	2.0	1.0	.7	9.6	13.0	30.0	3.7	12.0	12.0	1.8
18	.8	1.4	1.5	.8	.6	15.0	8.4	22.0	3.3	16.0	11.0	1.7
19	.8	1.2	1.4	1.5	.6	15.0	6.0	17.0	2.5	12.0	8.8	1.6
20	.7	1.0	1.2	1.7	.5	12.0	4.6	13.0	2.0	9.2	7.2	1.5
21	.6	1.0	1.1	1.4	.5	9.2	3.7	10.0	1.8	8.4	6.0	1.7
22	.6	1.4	1.0	1.1	.5	7.2	3.1	8.0	1.5	7.2	5.7	1.6
23	.6	1.7	1.0	.9	.5	6.9	2.8	6.9	1.4	57.0	5.1	1.5
24	.6	1.9	1.0	.8	.5	8.0	4.2	6.0	1.2	132.0	4.6	1.4
25	.7	1.5	1.5	.6	.5	5.7	3.5	4.9	1.0	90.0	4.2	1.4
26	1.0	1.2	1.4	1.4	.5	5.4	3.1	4.2	1.0	71.0	3.9	1.4
27	.9	1.1	1.2	1.4	.5	5.4	2.6	3.9	1.1	55.0	3.5	1.2
28	.8	1.1	1.2	1.0	.5	3.9	4.9	3.5	1.0	44.0	3.1	1.2
29	.7	---	1.2	.8	.5	3.0	9.2	3.1	1.0	37.0	2.8	1.2
30	.7	---	1.1	.6	.5	2.8	6.6	2.6	1.1	33.0	2.5	1.1
31	.6	---	1.0	---	.5	---	5.4	2.3	---	27.0	---	1.0
MEAN	0.70	0.92	1.13	1.21	0.84	4.17	12.9	12.9	2.17	31.9	6.93	1.63
INCHES	0.13	0.16	0.21	0.22	0.16	0.75	2.40	2.40	0.39	5.94	1.25	0.30
NOTES: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY MULTIPLY BY .005998. RUNOFF DATA FURNISHED BY U.S. GEOLOGICAL SURVEY. RECORDS ARE FAIR. FLOW OCCASIONALLY REGULATED BY STOPLOG CONTROL 1,500 FT UPSTREAM.												

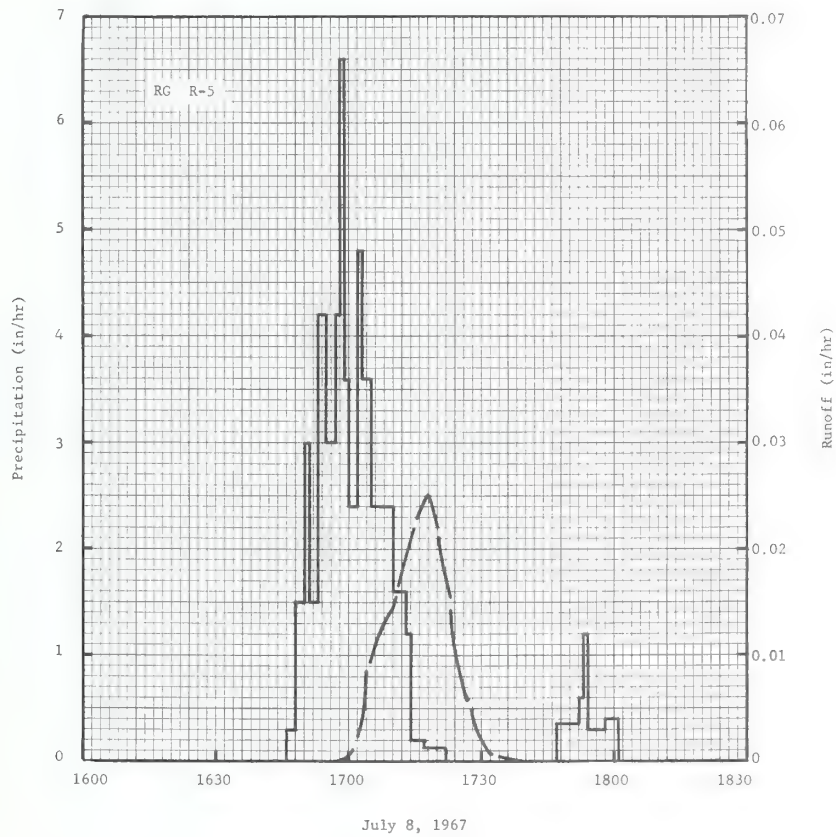
1967			SELECTED RUNOFF EVENT			VERO BEACH, FLORIDA (MONREVE RANCH) WATERSHED W-4			8.4		
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)	
Event of October 22 - 29, 1967											
10-22	.00	<u>2/</u> .03	10-23	5 RG	AVG <u>1/</u>		10-22	1800	7.2	.0000	
				0400	.00	.00	10-23	0100	6.9	.0126	
				0500	.12	.12	0600	33.	.0376		
				0600	.64	.76	1200	85.	.1258		
				0700	.06	.82	1800	91.	.2578		
				1100	.00	.82	10-24	2300	91.	.3713	
			1300	.09	1.00	0500		151.	.5525		
			1400	.32	1.32	0800		164.	.6707		
			1800	.25	2.32	1200		151.	.8283		
			Watershed conditions:			2200	.03	3.64	1800	118.	1.030
Approximate land use:			10-24	0800	.00	3.64	10-25	0600	94.	1.348	
(From SCS)				1000	.05	3.74	1800	85.	1.617		
70% in native range				1200	.11	3.96	10-26	1200	68.	1.960	
30% in improved pasture				1400	.05	4.06	10-27	2400	49.	2.486	
Good cover on entire area				1800	.39	5.62					
				10-25	1100	.00	5.62				
				1200	.04	5.66					

NOTES: TO CONVERT CFS TO IN/HR MULTIPLY BY .0002499. FOR MAP OF WATERSHED SEE PAGE 8.4-11 IN HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES 1962 USDA MISC. PUB. 1070. FOR 30-DAY ANTECEDENT P AND Q SEE TABLES ON PREVIOUS PAGES. 1/ PRECIPITATION ARITHMETICAL AVERAGE, 5 GAGES. 2/ RUNOFF PRIOR TO 1800.



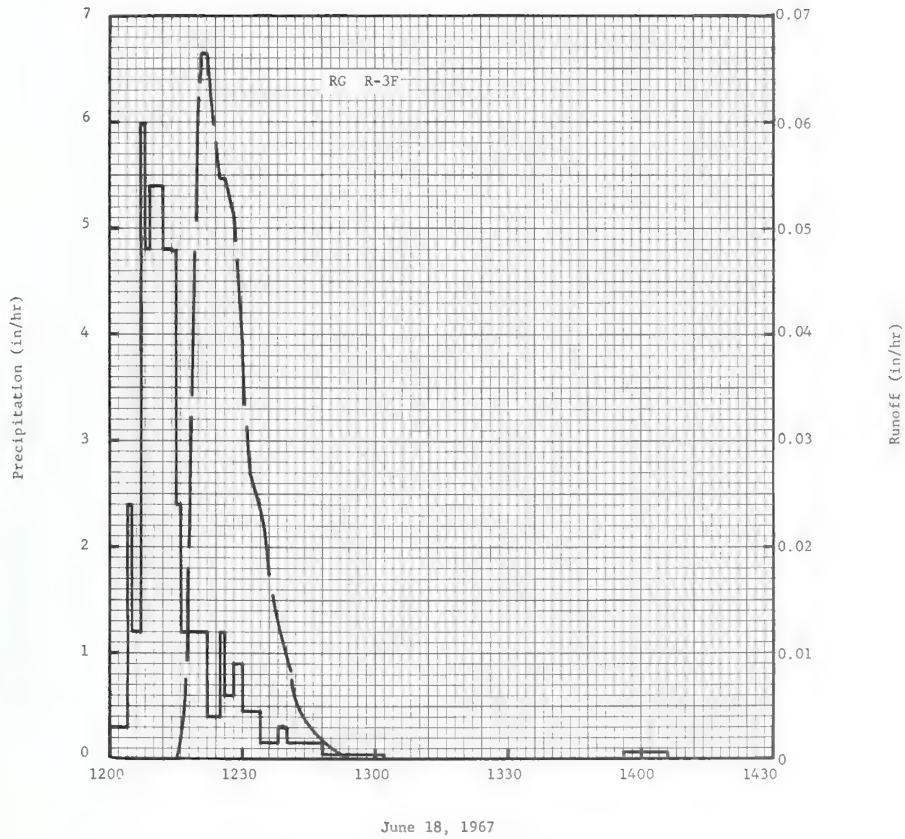
VERO BEACH, FLORIDA WATERSHED W-4

MONTHLY PRECIPITATION AND RUNOFF (inches)						BLACKSBURG, VIRGINIA WATERSHED W-III AREA—19.3 ACRES								
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL	
1967	2.15 T	2.23 .00	3.60 T	2.41 T	4.71 T	1.81 T	5.16 .01	4.53 T	2.49 T	2.97 T	1.38 .00	4.16 T	37.60 .01	
STA AVG ^{2/} (40-67)	2.68 .06	2.86 .01	3.22 T	3.00 .03	3.58 .05	3.58 .10	4.03 .05	3.73 .03	2.98 .01	2.37 T	2.17 T	2.76 .01	36.96 .35	
MEAN 77 YR	3.16	3.07	3.63	3.12	3.66	4.04	4.63	3.97	3.02	2.73	2.34	3.03E	40.40E	
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS														
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL											
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	7-8	.03	7-8	.01	7-8	.01	7-8	.01	7-8	.01	7-8	.01	7-8	.01
MAXIMUMS FOR PERIOD OF RECORD														
1939 TO 1967	6-5 1942	1.90	6-16 1942	.49	6-16 1942	.50	1-21 1964	.80	1-21 1964	.92	1-21 1964	.92	1-20 1964	1.32
													1-19 1964	1.52
Notes: Watershed conditions: Contour strips of clover, planted to corn in May, 33%; contour strips of fall sown barley harvested for ensilage in June, with a cover crop of spring seeded clover, 55%; pasture, good cover, 9%; woods, good cover, 3%. 1/ Precipitation obtained from rain gage R-5. 2/ Determined from continuous records, 1940-67; precipitation and runoff records began May 1939. 3/ Mean P based on 77-yr (1891-1967) U. S. Weather Bureau record period at Blacksburg, Virginia. Missing records for 11 months were estimated from nearby Weather Bureau records at Christiansburg, Va. and Va. Agr. Expt. Sta. at Blacksburg, Va.														
1967 SELECTED RUNOFF EVENT						BLACKSBURG, VIRGINIA WATERSHED W-III								
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF							
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)				
Event of July 8, 1967														
	RG R-5			RG	R-5									
6-18	.88	.0005	7 -8	1646	.00	.00	7 -8	1657	.0000	.0000				
6-19	.07	.0000		1648	.30	.01		1659	.0001	.0000				
6-22	.08	.0000		1650	1.50	.06		1700	.0007	T				
6-23	.02	.0000		1651	3.00	.11		1701	.0011	T				
6-25	.07	.0000		1653	1.50	.16		1702	.0024	T				
6-29	.02	.0000		1654	4.20	.23		1703	.0038	.0001				
6-30	.07	.0000		1655	4.20	.30		1704	.0085	.0002				
7 -1	.96	.0006		1657	3.00	.40		1705	.0093	.0003				
7 -2	.11	.0000		1658	4.20	.47		1706	.0112	.0005				
7 -6	.35	.0000		1659	6.60	.58		1707	.0121	.0007				
7 -7	.07	.0000		1700	3.59	.64		1710	.0142	.0014				
				1701	2.40	.68		1714	.0206	.0025				
				1702	2.40	.72		1716	.0236	.0033				
				1703	4.80	.80		1718	.0251	.0041				
				1704	3.60	.86		1720	.0221	.0049				
				1705	3.60	.92		1721	.0192	.0052				
				1706	2.40	.96		1723	.0154	.0058				
				1708	2.40	1.04		1724	.0102	.0060				
				1709	2.40	1.08		1726	.0068	.0063				
				1710	2.40	1.12		1728	.0049	.0065				
				1713	1.60	1.20		1729	.0029	.0065				
				1714	1.20	1.22		1732	.0007	.0066				
				1717	.20	1.23		1734	.0004	.0066				
				1722	.12	1.24		1736	.0001	.0067				
				1747	.00	1.24		1739	.0000	.0067				
				1752	.36	1.27		1740	.0000	.0067				
				1753	.60	1.28		1744	.0000	.0067				
				1754	1.20	1.30								
				1758	.30	1.32								
				1801	.40	1.34								
Watershed conditions Corn, 8" to 12" high, fair cover, 33%; small grain stubble, fair cover, 55%; woods, good cover of litter, 2%; pasture, good cover, 2" to 4" high, 10%.														
NOTES: TO CONVERT IN/HR TO CFS, MULTIPLY BY 19.4544. FOR MAP OF WATERSHED, SEE SELECTED RUNOFF EVENTS FOR SMALL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, JAN. 1960, P. 13.2-4.														



BLACKSBURG, VIRGINIA WATERSHED W-III

MONTHLY PRECIPITATION AND RUNOFF (inches)							BLACKSBURG, VIRGINIA WATERSHED W-IV AREA—3.49 ACRES									
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	P ^{1/} Q	1.76 .00	1.65 .00	3.56 .00	2.37 .00	4.00 T	1.85 .02	3.18 T	4.04 .00	2.36 .00	3.15 .00	1.38 .00	3.65 .00	32.95 .02		
STA AVE	P ^{2/} (52-57) Q	2.44 .03	3.05 .01	3.31 .01	2.93 .01	3.18 .02	2.96 .01	3.28 .01	3.38 .03	3.05 .02	2.40 T	2.18 T	2.69 T	34.85 .15		
77 YR	P ^{3/} Q	3.16	3.07	3.63	3.12	3.66	4.04	4.63	3.97	3.02	2.73	2.34	3.03E	40.40E		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	6-18	.07	6-18	.02	6-18	.02	6-18	.02	6-18	.02	6-18	.02	6-18	.02	6-18	.02
MAXIMUMS FOR PERIOD OF RECORD																
1951 to 1967	5-5 1958	.75	5-5 1958	.21	5-5 1958	.21	5-5 1958	.23	5-5 1958	.24	5-5 1958	.24	5-5 1958	.24	5-5 1958	.24
Notes: Watershed conditions: Contour strips of spring seeded oats and clover, oats harvested in August, good cover, 31%; intermixed with contour strips of second year clover, cut in June, then allowed to produce cover crop, excellent cover, 69%. 1/ Precipitation obtained from rain gage R-3F. 2/ Determined from continuous records, 1952-67; precipitation and runoff records began September 1951. 3/ Mean P based on 77-yr (1891-1967) U. S. Weather Bureau record period at Blacksburg, Virginia. Missing records for 11 months were estimated from nearby Weather Bureau records at Christiansburg, Va. and Va. Agr. Expt. Station at Blacksburg, Va.																
1967 SELECTED RUNOFF EVENT							BLACKSBURG, VIRGINIA WATERSHED W-IV									
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in./hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in./hr)	ACC. (inches)						
Event of June 18, 1967																
	RG R-3F			RG	R-3F											
5-14	.00	.0014	6-18	1200	.00	.00	6-18	1215	.0000	.0000						
5-19	.27	.0000		1204	.30	.02		1216	.0020	.0020 T						
5-21	.31	.0000		1205	2.40	.06		1217	.0065	.0001						
5-22	.18	.0000		1207	1.20	.10		1218	.0219	.0003						
5-29	.01	.0000		1208	5.99	.20		1219	.0412	.0009						
5-30	.06	.0000		1209	4.80	.28		1220	.0588	.0017						
5-31	.61	.0000		1211	5.40	.46		1221	.0665	.0027						
6-1	.32	.0000		1212	5.40	.55		1222	.0665	.0038						
6-3	.02	.0000		1214	4.80	.71		1223	.0625	.0049						
6-4	.08	.0000		1215	4.79	.79		1225	.0548	.0069						
				1216	2.40	.83		1226	.0548	.0078						
				1218	1.20	.87		1228	.0512	.0096						
				1221	1.20	.93		1230	.0381	.0110						
				1222	1.20	.95		1232	.0267	.0121						
				1225	.40	.97		1234	.0241	.0130						
				1226	1.20	.99		1236	.0173	.0137						
				1228	.60	1.01		1239	.0117	.0144						
				1230	.90	1.04		1241	.0082	.0147						
				1234	.45	1.07		1242	.0054	.0148						
				1238	.15	1.08		1245	.0031	.0150						
				1240	.30	1.09		1249	.0014	.0152						
				1248	.15	1.11		1254	.0000	.0152						
				1302	.04	1.12		1300	.0000	.0152						
				1356	.00	1.12										
				1406	.06	1.13										
Watershed conditions																
Oats, good cover, 24" to 30" high, headed out, 31%; clover stubble, 2 to 3 in. high, fair cover, 69%.																
NOTES: TO CONVERT IN/HR TO CFS, MULTIPLY BY 3.519. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, P. 13.3-5.																

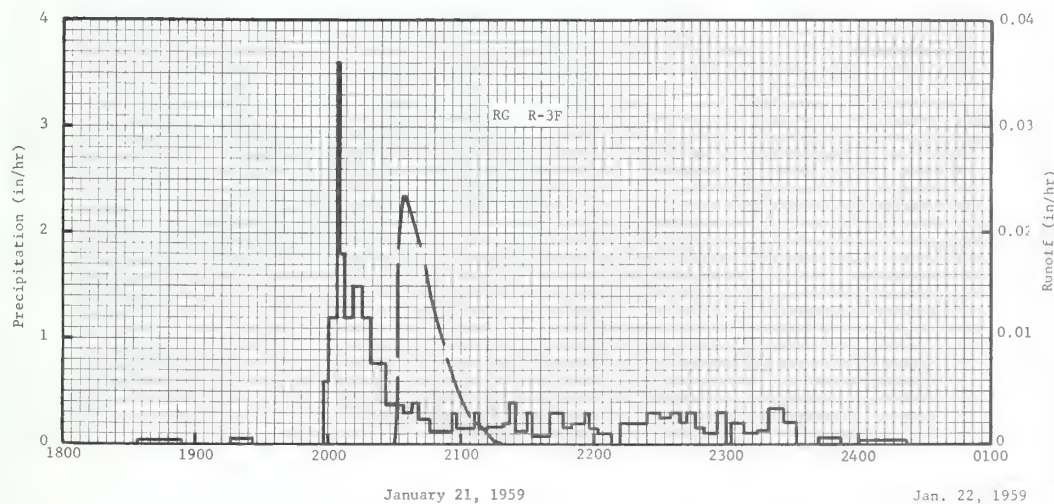


BLACKSBURG, VIRGINIA WATERSHED W-IV

MONTHLY PRECIPITATION AND RUNOFF (inches)							BLACKSBURG, VIRGINIA WATERSHED W-V AREA—6.08 ACRES									
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	P 1 O	1.76 .00	1.65 .00	3.56 .00	2.37 .00	4.00 .00	1.85 T	3.18 .00	4.04 .00	2.36 .00	3.15 .00	1.38 .00	3.65 .00	32.95 T		
STA AVG 2/P (52-67)		2.44 .02	3.05 .02	3.31 .02	2.93 T	3.18 .01	2.96 T	3.28 T	3.38 .02	3.05 .01	2.40 T	2.18 T	2.69 .01	34.85 .11		
77 YR		3.16	3.07	3.63	3.12	3.66	4.04	4.63	3.97	3.02	2.73	2.34	3.03E	40.40E		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	6-18	T	6-18	T	6-18	T	6-18	T	6-18	T	6-18	T	6-18	T	6-18	T
MAXIMUMS FOR PERIOD OF RECORD																
19 52 TO 19 67	5-5 1958	.70	5-5 1958	.15	5-5 1958	.16	3-1 1963	.18	3-1 1963	.23	3-1 1963	.23	3-1 1963	.23	3-1 1963	.23
Notes: Watershed conditions: Contour strips of spring seeded oats and clover, harvested in August, good cover, 34%; intermixed with contour strips of second year clover, cut in June, then allowed to produce cover crop, excellent cover, 57%; waterway, good cover, 9%. 1/ Precipitation obtained from rain gage R-3F. 2/ Determined from continuous records, 1952-67; precipitation and runoff records began January 1952. 3/ Mean P based on 77-yr (1891-1967) U. S. Weather Bureau record period at Blacksburg, Virginia. Missing records for 11 months were estimated from nearby Weather Bureau records at Christiansburg, Va. and Va. Agr. Expt. Station at Blacksburg, Va.																
1959 SELECTED RUNOFF EVENT							BLACKSBURG, VIRGINIA WATERSHED W-V									
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
Event of January 21 and 22, 1959 ^{4/}																
	RG R-3F			RG	R-3F											
12-23-58	.06	.0000	1-21	1834	.00	.00	1-21	2030	.0000	.0000						
12-28	2.72	.0459		1854	.03	.01		2031	.0100	.0001						
12-29	.26	.0086		1916	.00	.01		2032	.0201	.0003						
1-1-59	.19	.0000		1926	.06	.02		2034	.0236	.0011						
1-2	.05	.0000		1958	.00	.02		2035	.0236	.0015						
1-8	.40	.0000		2000	.60	.04		2040	.0201	.0033						
1-14	.07	.0000		2004	1.20	.12		2048	.0126	.0054						
1-15	.03	.0000		2005	3.60	.18		2050	.0112	.0058						
1-16	.21	.0000		2007	1.80	.24		2056	.0067	.0068						
1-19	.05	.0000		2011	1.20	.32		2103	.0031	.0073						
1-20	.04	.0000		2015	1.50	.42		2108	.0018	.0075						
				2019	1.20	.50		2109	.0018	.0076						
				2026	.77	.59		2113	.0008	.0076						
				2034	.38	.64		2115	.0003	.0077						
				2038	.30	.66		2120	.0000	.0077						
				2041	.40	.68										
				2046	.24	.70										
				2056	.12	.72										
				2058	.30	.73										
				2106	.15	.75										
				2108	.30	.76										
				2112	.15	.77										
				2119	.17	.79										
				2122	.20	.80										
				2125	.40	.82										
				2130	.12	.83										
				2132	.30	.84										
				2140	.08	.85										
				2146	.30	.88										
				2150	.15	.89										
				2156	.20	.91										
				2158	.30	.92										
				2202	.15	.93										
				2208	.10	.94										
				2212	.00	.94										
Continued on next page																
NOTES: TO CONVERT IN/HR TO CFS, MULTIPLY BY 6.131. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, P. 13.3-5. 4/ NO SUITABLE EVENT OCCURRED IN 1967.																

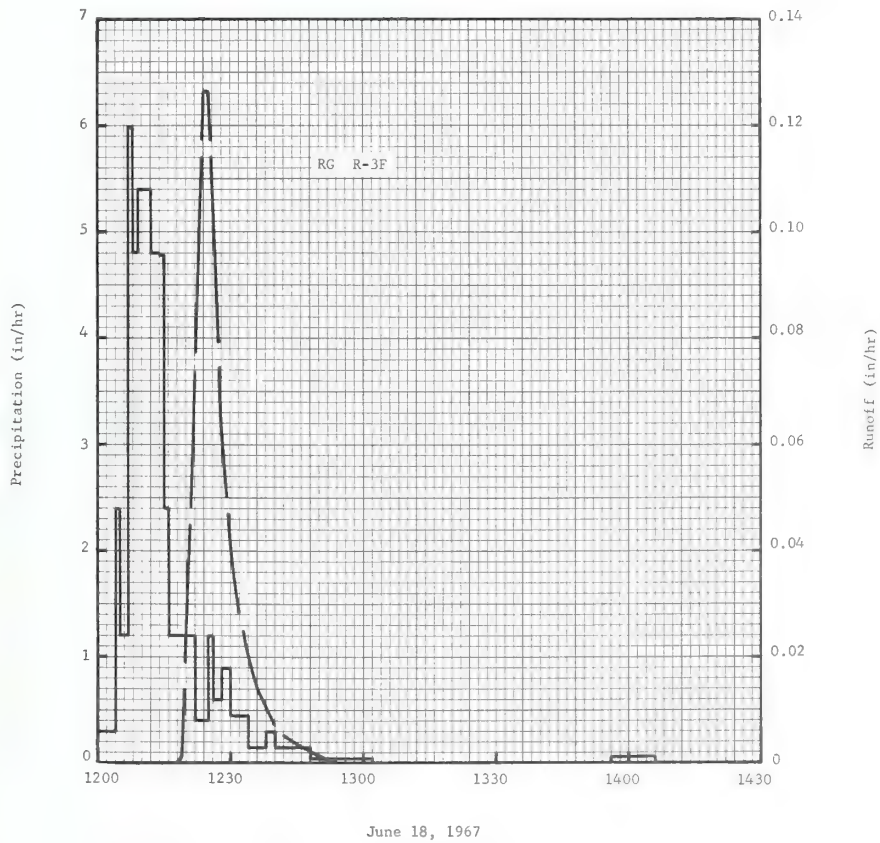
1959		SELECTED RUNOFF EVENT				BLACKSBURG, VIRGINIA		WATERSHED W-V			
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)	
Event of January 21 and 22, 1959 ^{1/} —Continued											
				RG	R-3F						
			1-21-59	2224	.20	.98					
				2230	.30	1.01					
				2235	.24	1.03					
				2239	.30	1.05					
				2242	.20	1.06					
				2246	.30	1.08					
				2250	.15	1.09					
				2256	.10	1.10					
				2300	.30	1.12					
				2302	.00	1.12					
				2308	.20	1.14					
				2314	.10	1.15					
				2319	.12	1.16					
				2326	.34	1.20					
				2332	.20	1.22					
				2342	.00	1.22					
				2352	.06	1.23					
				2400	.00	1.23					
			1-22	0022	.03	1.24					

NOTES: TO CONVERT IN/HR TO CFS, MULTIPLY BY 6.131. 1/ NO SUITABLE EVENT OCCURRED IN 1967.



BLACKSBURG, VIRGINIA WATERSHED W-V

MONTHLY PRECIPITATION AND RUNOFF (inches)							BLACKSBURG, VIRGINIA WATERSHED W-VI AREA—7.70 ACRES							
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1967	P-1	1.76	1.65	3.56	2.37	4.00	1.85	3.18	4.04	2.36	3.15	1.38	3.65	32.95
	Q	.00	.00	.01	.00	.00	.02	.00	.00	.00	.00	.00	.00	.03
STA AVG 2P (52-67)		2.44	3.05	3.31	2.93	3.18	2.96	3.28	3.38	3.05	2.40	2.18	2.69	34.85
		.05	.06	.06	.04	.03	.02	.02	.05	.03	.01	.01	.04	.42
MEAN P-3/ 77 YR		3.16	3.07	3.63	3.12	3.66	4.04	4.63	3.97	3.02	2.73	2.34	3.03E	40.40E
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS														
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL											
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	6-18	.13	6-18	.02	6-18	.02	6-18	.02	6-18	.02	6-18	.02	6-18	.02
MAXIMUMS FOR PERIOD OF RECORD														
1951 TO 1967	5-5 1958	.95	8-8 1958	.27	8-8 1958	.30	5-5 1958	.32	5-5 1958	.35	5-5 1958	.39	5-5 1958	.44
													5-5 1958	.46
Notes: Watershed conditions: Contour strips of spring seeded oats and clover, harvested in August, good cover, 12%; intermixed with contour strips of second year clover, cut in June, then allowed to produce cover crop, excellent cover, 73%; grassed waterway, good cover, 15%. 1/ Precipitation obtained from rain gage R-3F. 2/ Determined from continuous records, 1952-67; precipitation and runoff records began September 1951. 3/ Mean P based on 77-yr (1891-1967) U. S. Weather Bureau record period at Blacksburg, Virginia. Missing records for 11 months were estimated from nearby Weather Bureau records at Christiansburg, Va. and Va. Agr. Expt. Station at Blacksburg, Va.														
1967 SELECTED RUNOFF EVENT							BLACKSBURG, VIRGINIA WATERSHED W-VI							
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF							
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)				
Event of June 18, 1967														
	RG R-3F			RG	R-3F									
3-15	.00	.0072	6-18	1200	.00	.00	6-18	1218	.0000	.0000				
5-19	.27	.0000		1204	.30	.02		1219	.0014	.0014				
5-21	.31	.0000		1205	2.40	.06		1220	.0267	.0002				
5-22	.18	.0000		1207	1.20	.10		1221	.0447	.0008				
5-29	.01	.0000		1208	5.99	.20		1222	.0737	.0018				
5-30	.06	.0000		1209	4.80	.28		1223	.0929	.0032				
5-31	.61	.0000		1211	5.40	.46		1224	.1263	.0050				
6-1	.32	.0000		1212	5.40	.55		1225	.1263	.0071				
6-3	.02	.0000		1214	4.80	.71		1226	.1072	.0091				
6-4	.08	.0000		1215	4.79	.79		1227	.0862	.0107				
				1216	2.40	.83		1228	.0622	.0119				
				1218	1.20	.87		1229	.0518	.0129				
				1221	1.20	.93		1230	.0424	.0137				
				1222	1.20	.95		1231	.0340	.0143				
				1225	.40	.97		1232	.0283	.0148				
				1226	1.20	.99		1233	.0249	.0153				
				1228	.60	1.01		1234	.0216	.0157				
				1230	.90	1.04		1235	.0173	.0160				
				1234	.45	1.07		1236	.0145	.0162				
				1238	.15	1.08		1238	.0110	.0167				
				1240	.30	1.09		1239	.0089	.0168				
				1248	.15	1.11		1240	.0070	.0170				
				1302	.04	1.12		1242	.0053	.0172				
				1356	.00	1.12		1244	.0030	.0173				
				1406	.06	1.13		1247	.0018	.0174				
								1249	.0009	.0175				
								1251	.0006	.0175				
								1252	.0000	.0175				
								1253	.0000	.0175				
Watershed conditions														
Oats, good cover, 24 to 30 in. high, headed out, 12%; clover stubble, 2 to 3 in. high, fair cover, 73%; grassed waterway, good cover, 15%.														
NOTES: TO CONVERT IN/HR TO CFS, MULTIPLY BY 7.764. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, P. 13.3-5.														



BLACKSBURG, VIRGINIA WATERSHED W-VI

MONTHLY PRECIPITATION AND RUNOFF (inches)						BLACKSBURG, VIRGINIA THORNE CREEK W-I 13.06 AREA—3054 ACRES (4.77 SQ. MILES)										
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	P 1/	1.74	2.04	3.28	1.81	3.12	1.19	1.87	7.83	2.12	2.99	1.55	4.19	33.73		
	O	.39	.31	.62	.31	.20	.12	.09	.19	.06	.05	.03	.09	2.46		
STA AVG 2/P		2.21	3.00	3.42	2.71	3.43	2.27	3.15	3.92	3.68	2.70	2.43	2.91	35.83		
(57-67)	O	.38	.37	.65	.67	.52	.30	.19	.21	.13	.13	.12	.22	3.89		
MEAN P 3/		2.92	2.71	3.25E	2.75	3.24	3.31	4.26E	3.34E	2.76	2.72	2.17	2.82	36.25E		
62 YR		2.92	2.71	3.25E	2.75	3.24	3.31	4.26E	3.34E	2.76	2.72	2.17	2.82	36.25E		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	8-24	.02	8-24	.01	8-24	.02	8-24	.05	8-24	.06	8-24	.07	8-22	.09	3-13	.21
MAXIMUMS FOR PERIOD OF RECORD																
19 57 TO	5-17	.12	5-17	.10	5-17	.18	5-17	.30	5-17	.34	5-17	.38	5-17	.47	3-30	1.09
19 67	1958		1958		1958		1958		1958		1958		1958		1960	
Notes: Watershed conditions: Pasture, usually good cover of bluegrass and other native grasses and clovers, 59%; corn, 8%; hay, 26%; total cultivated, 34%. Farm woods, 4%; idle land, 2%; roads, 1%. 1/ Precipitation Thiessen weighted from R-1, R-2 and R-3. 2/ Determined from continuous records from June, 1957 through 1967, precipitation Thiessen weighted. 3/ Mean P based on 62-yr (1906-67) U.S. Weather Bureau record period at Radford 6 WSW, Virginia, except for missing monthly totals for June, July, August, November and December, 1967, which were obtained from nearby Weather Bureau records at Pulaski 2E, Virginia.																
1967 DAILY PRECIPITATION (inches)						BLACKSBURG, VIRGINIA THORNE CREEK W-I 13.06										
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC				
1	.00	.00	.00	.00	.02	.32	.00	.00	.00	.00	.07	.00				
2	.00	.05	.00	.00	.27	.30	.26	.00	.00	.00	.22	.38				
3	.00	.00	.00	.00	.00	.00	.00	.05	.00	.00	.00	.52				
4	.21M	.00	.19	.00	.04	.04	.00	1.56	.00	.00	.00	.00				
5	.04S	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00				
6	.00	.29S	.87	.00	.00	.00	.31	.00	.00	.14	.00	.00				
7	.02	.31S	.36	.00	.61	.00	.23	.03	.00	.11	.00	.00				
8	.09	.00	.00	.00	.13	.00	.02	.07	.00	.01	.00	.00				
9	.06	.00	.00	.00	.07	.00	.00	.00	.28	.25	.00	.04				
10	.00	.00	.00	.10	.00	.00	.08	.00	.00	.41	.00	1.01				
11	.00	.00	.00	.00	.00	.00	.05	.00	.00	.00	.00	.32				
12	.00	.00	.49	.00	.00	.00	.00	.00	.00	.00	.00	.00				
13	.08E	.00	.40	.15	.10	.00	.00	.00	.00	.00	.00	.00				
14	.24	.00	.00	.00	.33	.00	.06	.00	.00	.00	.00	.00				
15	.00	.00	.48	.00	.10	.00	.01	.00	.00	.00	.00	.00				
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00				
17	.00	.75M	.00	.18	.01	.00	.07	.00	.00	.05	.00	.00				
18	.00	.18M	.00	.00	.00	.00	.15	.00	.00	.85	.00	.38E				
19	.11S	.00	.00	.00	.22	.00	.00	.00	.00	.00	.00	.05				
20	.00	.39	.12M	.00	.00	.00	.01	.14	.00	.00	.00	.00				
21	.00	.00	.29	.00	.38	.00	.00	.95	.12	.00	.09	.00				
22	.00	.00	.00	.45	.19	.29	.00	2.23	.00	.00	.31	.41				
23	.00	.00	.00	.00	.00	.00	.00	.09	.00	.00	.07	.00				
24	.00	.00	.00	.04	.00	.00	.00	2.37E	.00	.00	.28	.00				
25	.00	.00	.00	.00	.00	.11	.00	.11	.00	1.14	.01	.00				
26	.00	.00	.00	.88	.00	.00	.01	.09	.00	.00	.00	.00				
27	.89	.04S	.00	.01	.00	.00	.00	.08	.12	.00	.00	.00				
28	.00	.03M	.08	.00	.00	.00	.36	.00	1.60	.00	.00	.82S				
29	.00	-----	.00	.00	.00	.00	.03	.00	.00	.00	.03	.04S				
30	.00	-----	.00	.00	.08	.13	.00	.00	.00	.00	.47	.00				
31	.00	-----	.00	-----	.57	-----	.22	.06	-----	.03	-----	.22S				
TOTAL	1.74	2.04	3.28	1.81	3.12	1.19	1.87	7.83	2.12	2.99	1.55	4.19				
STA AV	2.21	3.00	3.42	2.71	3.43	2.27	3.15	3.92	3.68	2.70	2.43	2.91				
NOTES: PRECIPITATION AMOUNTS ARE THIESSEN WEIGHTED VALUES FROM GAGES R-1, R-2 & R-3. STA AV IS FOR PERIOD JUNE, 1957 THROUGH 1967. FOR DRAINAGE PATTERN MAP OF WATERSHED SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, MISC. PUB. 945, P. 13.6-5.																

1967 MEAN DAILY DISCHARGE (cfs)						BLACKSBURG, VIRGINIA THORNE CREEK W-I 13.06						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.94	1.50	1.52	1.83	1.00	.86	.40	.32	.42	.22	.18	.16
2	1.09	1.49	1.60	1.72	1.17	.91	.44	.29	.34	.22	.24	.17
3	1.17	1.43	1.50	1.66	1.00	.67	.42	.29	.34	.20	.22	.60
4	1.27	1.33	1.52	1.60	.96	.61	.38	2.50	.32	.20	.19	.26
5	1.30	1.33	1.44	1.53	.99	.54	.36	.86	.32	.18	.16	.22
6	1.27	1.38	1.83	1.52	.95	.54	.57	.43	.31	.19	.17	.20
7	1.57	1.39	3.80	1.47	1.25	.52	.62	.35	.26	.20	.10	.20
8	2.16	1.15	2.79	1.45	1.02	.40	.45	.40	.26	.20	.16	.17
9	2.30	1.14	2.58	1.42	.95	.50	.38	.32	.30	.22	.16	.16
10	2.28	1.22	2.50	1.44	.90	.52	.32	.31	.28	.36	.16	.63
11	2.07	1.21	2.36	1.35	.91	.49	.35	.27	.26	.22	.14	.69
12	2.04	1.13	2.77	1.36	.88	.48	.33	.26	.25	.20	.12	.57
13	2.04	1.12	3.22	1.32	.83	.48	.33	.25	.25	.19	.13	.45
14	2.14	1.09	3.07	1.28	1.06	.48	.33	.25	.23	.17	.14	.47
15	1.87	1.06	3.69	1.26	.91	.49	.34	.23	.23	.17	.14	.35
16	1.73	1.03	3.44	1.19	.80	.52	.30	.23	.23	.16	.13	.35
17	1.72	1.26	3.41	1.33	.84	.51	.30	.23	.22	.17	.13	.31
18	1.61	1.21	3.22	1.24	.73	.52	.25	.23	.22	.37	.10	.43
19	1.60	1.18	3.18	1.15	.90	.46	.33	.21	.22	.25	.11	.37
20	1.58	1.82	3.09	1.12	.77	.46	.30	.26	.23	.18	.11	.33
21	1.57	2.06	3.26	1.17	.86	.46	.30	.40	.25	.16	.13	.32
22	1.44	1.99	2.82	1.35	.91	.50	.32	2.31	.25	.17	.17	.51
23	1.35	2.01	2.73	1.13	.77	.44	.31	1.07	.23	.16	.14	.40
24	1.25	2.11	2.55	1.12	.74	.39	.29	8.30	.22	.17	.15	.46
25	1.17	1.70	2.44	1.10	.67	.40	.31	.94	.20	.62	.15	.42
26	1.12	1.61	2.36	1.54	.61	.38	.30	.61	.20	.29	.14	.39
27	2.53	1.71	2.20	1.23	.56	.36	.29	.52	.22	.25	.12	.34
28	1.81	1.69	2.23	1.05	.52	.36	.34	.46	.57	.22	.09	.34
29	1.63	-----	2.04	1.00	.43	.38	.37	.41	.31	.20	.11	.36
30	1.45	-----	1.90	1.00	.58	.40	.30	.38	.24	.20	.20	.36
31	1.58	-----	1.85	-----	.79	-----	.33	.40	-----	.17	-----	.35
MEAN	1.63	1.44	2.55	1.33	.85	.50	.35	.78	.27	.22	.15	.37
INCHES	.39	.31	.62	.31	.20	.12	.09	.19	.06	.05	.03	.09

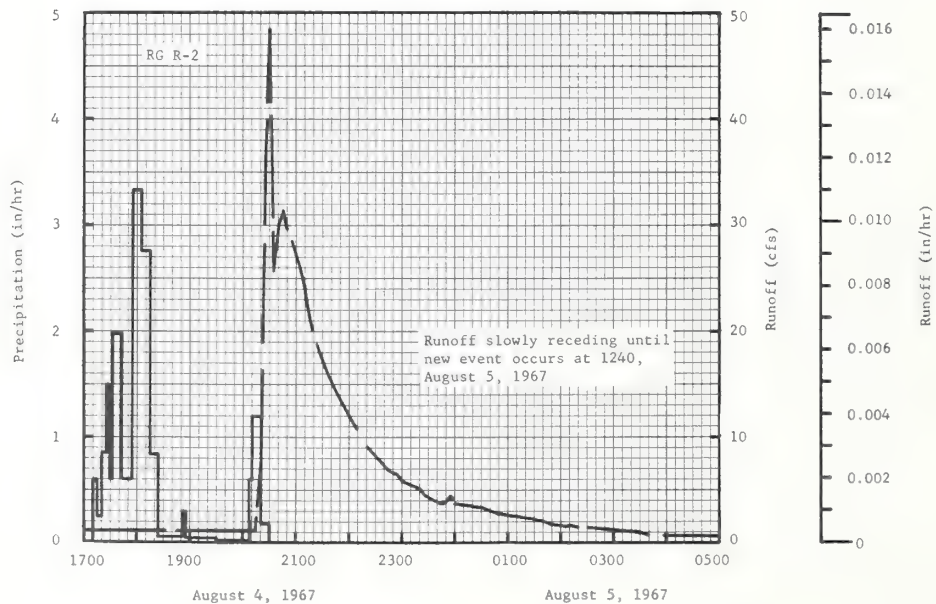
NOTES: TO CONVERT CFS TO IN/DAY, MULTIPLY BY 0.0077935.

1967 SELECTED RUNOFF EVENT						BLACKSBURG, VIRGINIA THORNE CREEK W-I 13.06						
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF					
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)		
Event of August 4 and 5, 1967												
8 -4	3 RG ^{1/} .00	2/.0024	8 -4	RG	R-2		8 -4	2015	1.1086	.0000		
				1710	.00	.00		2020	8.0682	.0001		
				1715	.60	.05		2025	34.4286	.0007		
				1720	.24	.07		2030	48.5326	.0018		
				1725	.84	.14		2035	25.7445	.0028		
				1729	1.50	.24						
				1732	.60	.27		2040	30.0249	.0036		
				1742	1.98	.60		2045	31.3183	.0044		
				1754	.60	.72		2050	29.6862	.0052		
				1805	3.33	1.33		2055	28.5776	.0060		
				1815	2.76	1.79		2100	27.2534	.0068		
				1823	.83	1.90		2105	25.8368	.0075		
				1851	.06	1.93		2110	24.1739	.0082		
				1855	.30	1.95		2130	17.0295	.0104		
				1930	.05	1.98		2220	9.1153	.0139		
				2008	.02	1.99		2225	8.8073	.0142		
				2010	.60	2.01		2230	8.1914	.0144		
				2020	1.20	2.21		2235	7.9451	.0146		
				2030	.18	2.24		2245	6.9288	.0150		
								2255	6.4361	.0154		
								2300	5.9126	.0156		
				RG	R-3		8 -5	2320	5.0503	.0162		
				1710	.00	.00		2325	4.6500	.0163		
				1715	.48	.04		2345	3.8494	.0167		
				1720	.24	.06		2350	3.9725	.0169		
				1725	.72	.12		2355	4.4345	.0170		
				1729	1.35	.21						
				1732	.60	.24		2400	3.8186	.0171		
				1742	1.74	.53		0025	3.4182	.0176		
				1754	.55	.64		0030	3.4182	.0177		
				1805	2.95	1.18		0050	2.8023	.0180		
				1815	2.40	1.58		0055	2.8023	.0181		

NOTES: TO CONVERT CFS TO IN/HR, MULTIPLY BY 0.0003247. FOR 30-DAY ANTECEDENT P & Q, SEE DAILY TABLES ON THIS AND PREVIOUS PAGE. 1/THIESSEN WEIGHTED AVERAGE FOR RG, R-1, R-2, AND R-3. 2/CONTINUOUS FLOW PRIOR TO 2015.

1967 SELECTED RUNOFF EVENT			BLACKSBURG, VIRGINIA				THORNE CREEK W-I		13.06
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF		
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)
Event of August 4 and 5, 1967 - Continued									
			8 -4	RG 1823	R-3 .75	1.68	8 -5	0105	2.5560
				1851	.04	1.70		0110	2.5560
				1855	.30	1.72		0125	2.1864
				1930	.05	1.75		0130	2.1864
				2008	.02	1.76		0135	2.0633
				2010	.60	1.78		0140	2.0633
				2020	1.02	1.95		0150	1.8169
				2030	.18	1.98		0155	1.8169
				RG	R-1	.49		0205	1.6013
				3RG	AVG1/	1.56		0210	1.7861
								0220	1.5397
								0230	1.4474
								0240	1.3550
								0250	1.2626
								0300	1.1394
							8 -5	0315	1.1086
								0325	1.1086
								0340	.8623
								0410	.8315
								0440	2/ .7391
								0515	.6467
								0605	.5543
								0735	.4927
								1150	.5543

NOTES: TO CONVERT CFS TO IN/HR, MULTIPLY BY 0.0003247. 1/ THIESSEN WEIGHTED FOR RG R-1, R-2, R-3. 2/ RUNOFF SLOWLY RECEDING UNTIL SMALL EVENT OCCURRED ON 8-5-67 AT 1240.



BLACKSBURG, VIRGINIA THORNE CREEK W-I

MONTHLY PRECIPITATION AND RUNOFF (inches)						BLACKSBURG, VIRGINIA				CRAB CREEK W-I				13.07										
						AREA—786 ACRES				(1.23 SQ. MILES)														
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL										
1967	P ₁	2.06	1.92	4.20	1.98	3.79	2.40	2.19	6.44	2.18	2.21	1.24	4.00	34.61										
	Q	.76	.54	1.56	.40	.31	.19	.17	.41	.16	.15	.12	.25	5.02										
	STA AVG ² _P	2.24	2.81	3.23	2.66	3.12	2.30	3.58	3.57	3.15	2.55	2.32	2.84	34.37										
(57-67)	Q	.72	.76	1.20	.90	.60	.30	.27	.32	.23	.25	.25	.47	6.27										
MEAN	P ₃																							
77 YR		3.16	3.07	3.63	3.12	3.66	4.04	4.63	3.97	3.02	2.73	2.34	3.03E	40.40E										
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																								
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL																					
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS									
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME								
1967	3-13	.17	3-13	.15	3-13	.23	3-13	.36	3-13	.42	3-13	.47	3-13	.54	3-7	.84								
MAXIMUMS FOR PERIOD OF RECORD																								
19 57 TO	8-21	.23	3-13	.15	3-13	.23	3-13	.36	4-3	.42	4-3	.52	4-3	.73	3-27	1.76								
1967	1966		1967		1967		1967		1960		1960		1960		1960									
Notes: Watershed conditions: Permanent pasture, usually good cover of native bluegrass combined with other grasses and clovers, 42%; alfalfa and other hay crops, 29%; corn, 11%; total cultivated 40%, Farm woods, hardwood predominantly, 13%; idle land, 4%; roads, 1%. 1/ Precipitation Thiessen weighted from R-1, R-2, R-3 and R-4. 2/ Determined from continuous records from August, 1957 through 1967, precipitation Thiessen weighted. 3/ Mean P based on 77-yr. (1891-1967) U.S. Weather Bureau record period at Blacksburg, Virginia. Missing records for 11 months were estimated from nearby Weather Bureau records at Christiansburg, Va. and Va. Agr. Expt. Sta. at Blacksburg, Va.																								
1967 DAILY AIR TEMPERATURE (degrees F)						BLACKSBURG, VIRGINIA				CRAB CREEK W-I				13.07										
DAY	JAN		FEB		MAR		APR		MAY		JUNE		JULY		AUG		SEPT		OCT		NOV		DEC	
1	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
2	44	30	62	46	32	17	76	42	71	54	50	45	82	56	84	60	70	49	68	42	57	46	32	28
3	43	30	60	30	58	22	77	50	68	40	65	49	76	67	83	60	69	43	75	44	59	42	31	25
4	30	43	24	63	38	72	39	59	39	61	46	78	63	88	65	70	46	78	47	61	35	39	26	
5	34	18	50	20	46	35	60	31	58	39	69	53	74	56	81	63	70	46	79	50	48	29	50	24
6	29	18	47	28	70	30	77	44	68	45	69	53	76	47	82	60	76	46	78	51	35	20	57	23
7	38	20	44	23	62	50	79	56	62	52	70	50	66	55	80	57	79	49	76	51	34	18	50	27
8	47	28	26	13	60	23	77	43	67	44	72	52	68	60	72	60	74	51	51	46	36	18	60	36
9	44	32	33	6	48	21	63	38	59	41	77	49	77	63	83	55	74	53	61	48	42	23	60	41
10	40	30	27	15	57	26	64	43	51	40	80	55	81	63	83	64	64	58	58	53	57	25	48	35
11	40	26	36	19	65	38	66	47	65	40	83	57	82	63	78	57	70	52	61	49	61	35	41	35
12	24	14	41	28	75	52	59	38	66	50	79	58	84	68	72	55	60	45	53	44	64	44	40	34
13	48	10	34	18	57	40	61	34	75	57	83	56	87	66	73	52	63	45	57	40	66	46	48	32
14	55	26	47	14	58	39	53	40	65	52	86	58	78	63	74	51	66	42	63	40	47	36	58	30
15	50	38	59	29	72	42	78	50	67	52	80	62	76	56	77	50	69	42	70	46	47	31	58	34
16	46	32	56	38	70	30	76	55	75	43	84	62	74	52	79	50	75	43	67	52	33	18	43	21
17	35	26	58	31	44	23	78	56	58	40	85	58	77	52	80	52	80	50	68	51	45	15	39	18
18	45	22	31	22	39	11	72	56	63	38	84	60	74	55	81	55	76	58	70	56	53	26	60	25
19	30	18	34	22	31	8	63	43	70	39	82	60	74	57	81	60	79	51	61	37	50	36	55	43
20	28	13	36	26	42	13	56	39	74	46	80	62	78	59	86	62	78	58	46	33	44	31	66	52
21	42	15	40	31	39	28	71	34	70	53	78	62	79	58	79	63	83	60	59	29	46	30	55	47
22	52	22	39	17	56	31	66	49	54	43	86	60	80	58	68	64	77	61	60	41	50	34	58	44
23	65	40	33	15	44	32	70	53	50	42	83	65	82	57	72	65	62	44	63	30	58	32	59	22
24	67	40	30	17	57	29	64	46	59	44	82	62	84	59	72	64	62	40	65	35	44	22	22	14
25	64	46	17	1	56	27	58	35	64	38	84	57	86	62	70	61	66	39	63	39	35	22	40	14
26	66	41	11	1	70	34	58	28	74	42	84	63	80	65	80	64	69	41	56	40	51	33	43	28
27	66	40	29	3	75	44	51	40	70	53	74	56	84	64	82	62	73	44	54	36	60	29	38	21
28	56	24	38	18	61	44	48	38	84	49	71	54	84	56	77	59	72	51	56	36	46	24	30	21
29	34	24	34	24	66	46	53	33	84	61	72	55	84	62	69	54	65	48	51	29	33	18	30	23
30	38	25	---	---	66	45	67	34	80	59	76	56	78	62	78	52	49	34	56	26	40	19	28	14
31	40	27	---	---	61	40	68	46	59	50	80	61	81	61	79	52	58	31	62	36	39	29	31	13
31	50	28	---	---	67	39	---	---	50	48	---	---	80	60	76	56	---	---	54	44	---	---	32	25
AV.	45	26	39	20	57	32	66	42	65	46	76	56	78	59	78	58	69	47	62	41	48	28	45	28
MEAN	38.5	24	31.5	41.5	53.5	61.0	65.5	67.0	69.0	57.0	52.5	40.5	39.5											
STA AV	43	24	44	24	53	31	63	39	72	47	79	56	82	59	80	58	76	51	66	40	54	30	44	25
NOTES: TEMPERATURE DATA FROM CRAB CREEK W-I STATION LOCATED IN MONTGOMERY COUNTY, VIRGINIA, 2 MILES WEST OF CHRISTIANBURG, VA., NEW RIVER. FOR TOPOGRAPHIC (REVISED DRAINAGE PATTERN) MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1964, MISC. PUB. 1194, P. 13.7-5.																								

1967 DAILY PRECIPITATION (inches)						BLACKSBURG, VIRGINIA CRAB CREEK W-I 13.07						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.00	.00	.00	.00	.07	.25	.04	.00	.00	.00	.00	.00
2	.00	.12	.00	.00	.78	.02	.11	.00	.00	.00	.24	.33
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.62
4	.15M	.00	.18	.00	.03	.04	.00	2.28	.00	.00	.00	.00
5	.03S	.00	.00	.00	.01	.00	.00	.02	.00	.00	.00	.00
6	.00	.17S	.32	.00	.01	.00	.20	.00	.00	.04	.00	.00
7	.00	.27S	.88	.00	.71	.00	.08	.00	.00	.06	.00	.00
8	.24	.00	.00	.00	.15	.00	.51	.00	.00	.00	.00	.00
9	.00	.03S	.00	.00	.00	.00	.00	.04	.27E	.11	.00	.06
10	.00	.00	.00	.04	.00	.00	.20	.07	.03E	.16	.00	.68
11	.00	.00	.00	.00	.04	.00	.42	.00	.00	.00	.00	.16
12	.00	.00	.43	.00	.00	.00	.00	.00	.00	.00	.00	.01
13	.06	.00	1.32	.36	.03	.00	.00	.00	.00	.00	.00	.00
14	.33	.00	.01	.00	.23	.00	.04	.00	.00	.00	.00	.00
15	.00	.00	.40	.00	.16	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.70S	.00	.41	.01	.00	.02	.00	.00	.00	.00	.00
18	.00	.12S	.00	.00	.00	.80	.09	.00	.00	1.02	.00	.34
19	.08S	.00	.00	.00	.13	.00	.00	.08	.00	.00	.00	.09
20	.00	.43	.08M	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.48	T	.39	.00	.00	.68	.14	.00	.06	.00
22	.00	.00	.00	.27	.19	.74	.00	1.32	T	.00	.21	.60
23	.00	.05S	.01	T	.00	.19	.00	.09	.00	.00	.08	.00
24	.00	.00	.01	.04	.00	.00	.00	1.71	.00	.00	.20	.00
25	.00	.00	.02	.00	.00	.29	.00	T	.00	.82	T	.00
26	.00	.00	.00	.82	.00	.00	.00	T	.00	.00	.00	.00
27	1.17	T	.00	.04	.00	.00	.00	.15	T	.00	.00	.00
28	.00	.03M	.06	.00	.00	.00	.25	.00	1.74	.00	.00	.92S
29	.00	-----	.00	.00	.00	.00	.00	.00	.00	.00	.00	.03S
30	.00	---	.00	.00	.28	.07	.10	.00	.00	.00	.45	.00
31	.00	---	.00	---	.57	---	.13	.00	---	T	---	.16S
TOTAL	2.06	1.92	4.20	1.98	3.79	2.40	2.19	6.44	2.18	2.21	1.24	4.00
STA AV	2.24	2.81	3.23	2.66	3.12	2.30	3.58	3.57	3.15	2.55	2.32	2.84
NOTES: PRECIPITATION AMOUNTS ARE THIESSEN WEIGHTED VALUES FROM GAGES R-1, R-2, R-3 AND R-4. STA AV IS FOR PERIOD AUGUST, 1957 THROUGH 1967.												

1967 MEAN DAILY DISCHARGE (cfs)						BLACKSBURG, VIRGINIA CRAB CREEK W-I 13.07						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.51	.59	.53	.62	.37	.34	.16	.18	.19	.16	.13	.14
2	.71	.60	.56	.62	.51	.27	.19	.16	.19	.13	.16	.14
3	.76	.55	.56	.59	.50	.25	.18	.16	.18	.13	.15	.58
4	.76	.50	.63	.56	.37	.24	.16	4.24	.17	.13	.13	.26
5	.63	.50	.62	.53	.36	.22	.16	.81	.17	.13	.13	.21
6	.56	.47	.67	.52	.34	.22	.20	.21	.16	.14	.13	.18
7	1.03	.47	5.11	.53	.66	.21	.19	.19	.16	.16	.13	.16
8	2.11	.41	1.31	.50	.42	.19	.23	.19	.16	.16	.13	.16
9	1.37	.44	1.01	.50	.38	.19	.23	.19	.20	.16	.12	.16
10	1.03	.43	.89	.50	.32	.21	.19	.18	.19	.16	.13	.38
11	.76	.48	.81	.45	.34	.20	.28	.16	.16	.14	.13	.37
12	.68	.50	1.22	.39	.31	.19	.18	.16	.16	.13	.13	.29
13	.68	.48	14.84	.48	.30	.19	.16	.16	.16	.13	.13	.24
14	1.07	.48	2.63	.41	.36	.18	.16	.16	.16	.13	.13	.22
15	.75	.47	3.30	.37	.36	.18	.18	.16	.16	.13	.12	.21
16	.67	.44	1.74	.34	.32	.16	.16	.16	.16	.13	.12	.19
17	.58	.51	1.42	.41	.30	.16	.16	.16	.16	.15	.13	.19
18	.51	.50	1.18	.40	.29	.31	.16	.16	.16	.30	.13	.25
19	.47	.55	1.13	.34	.26	.21	.16	.16	.16	.18	.15	.24
20	.50	1.61	1.17	.34	.28	.19	.16	.16	.16	.16	.16	.22
21	.51	1.58	1.81	.37	.31	.19	.16	.25	.18	.16	.16	.22
22	.53	1.03	1.14	.44	.34	.25	.16	.43	.18	.16	.18	.62
23	.49	.90	1.06	.37	.28	.38	.16	.35	.16	.13	.18	.42
24	.44	.69	.93	.36	.25	.18	.16	2.32	.16	.13	.16	.34
25	.41	1.11	.89	.34	.24	.20	.16	.54	.14	.34	.14	.30
26	.37	.59	.81	.60	.23	.19	.16	.37	.13	.18	.13	.28
27	3.08	.56	.82	.43	.22	.18	.16	.33	.13	.16	.11	.25
28	1.04	.56	.81	.37	.21	.16	.18	.28	.50	.14	.11	.27
29	.80	-----	.73	.34	.21	.16	.19	.25	.18	.13	.11	.26
30	.76	---	.65	.34	.26	.16	.19	.25	.16	.13	.18	.24
31	.64	---	.65	---	.41	---	.17	.21	---	.13	---	.22
MEAN	.81	.64	1.67	.45	.33	.21	.18	.44	.18	.16	.14	.26
INCHES	.76	.54	1.56	.40	.31	.19	.17	.41	.16	.15	.12	.25
NOTES: TO CONVERT CFS TO IN/DAY, MULTIPLY BY 0.030282.												

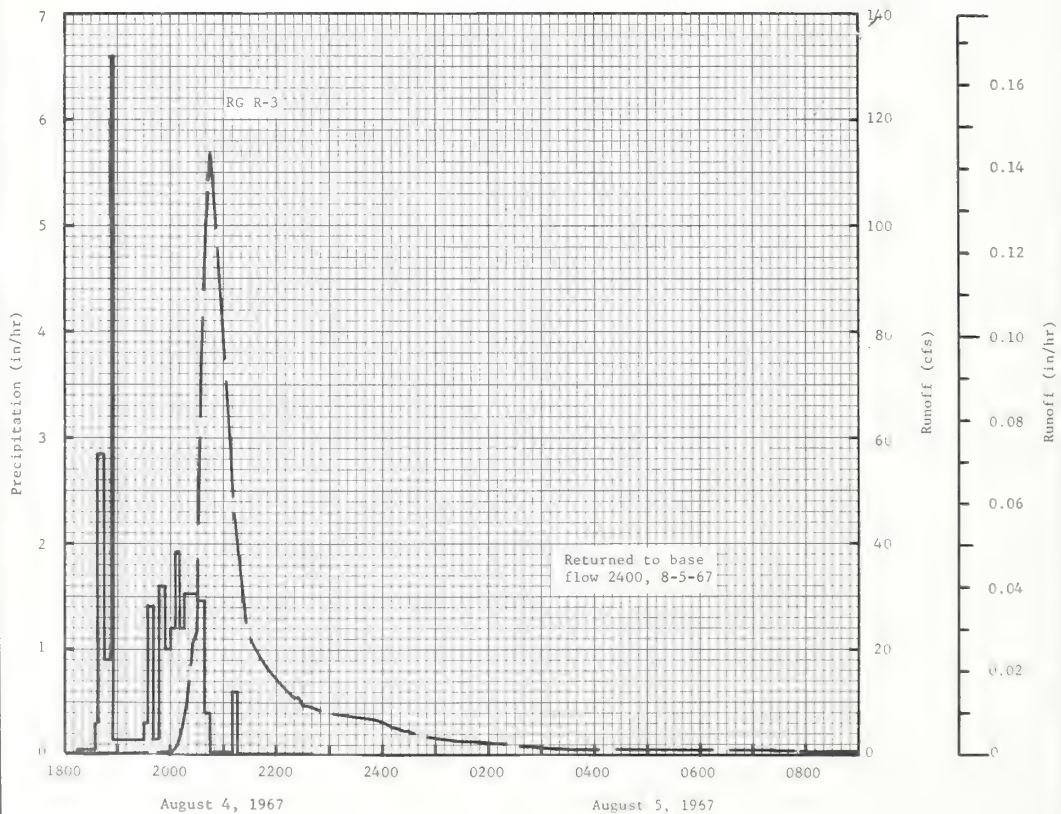
1967 SELECTED RUNOFF EVENT			BLACKSBURG, VIRGINIA				GRAB CREEK W-I 13.07			
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)
Event of August 4 and 5, 1967										
8 -4	4RG 1/ .00	2/.0044	8 -4	RG	R-2		8 -4	1900	.2061	.0000
				1830	.00	.00		1905	.2695	.0000 T
				1835	.24	.02		1910	.3487	.0001
				1842	3.09	.38		1920	.4042	.0001
				1845	2.00	.48		1925	.3963	.0002
				1850	1.32	.59				
				1900	.18	.62		1935	.4518	.0003
				1905	.00	.62		1945	.5231	.0004
				1910	.24	.64		1950	.5786	.0004
				1920	.12	.66		1955	.5944	.0005
				1925	.36	.69		2000	.7688	.0006
				1930	.12	.70		2005	1.2839	.0007
				1940	1.20	.90		2010	3.7646	.0009
				1947	.17	.92		2015	6.6257	.0015
				1953	2.00	1.12		2020	12.0388	.0025
				1957	1.20	1.20		2025	20.1228	.0042
				2000	.80	1.24		2030	23.7052	.0065
				2010	1.32	1.46		2035	73.6279	.0116
				2015	1.32	1.57		2040	100.0436	.0207
				2025	1.80	1.87		2045	113.9925	.0320
				2028	.60	1.90		2055	91.4682	.0536
Watershed conditions										
Pasture, mostly a mixture of native grasses 3 to 6 in. high, good cover, 42%; hay, mostly clover and orchard grass, 4 to 12 in. high, 29%; corn, 5 to 6 ft. high, good cover, 11%; woods, hardwood and conifers mixed, good cover, 13%; idle, good cover of weeds and grasses, 4%; paved roads, 1%.										
8 -4	4RG 1/ .00	2/.0044	8 -4	RG	R-3		8 -5	2100	79.9683	.0626
				2040	.34	2.10		2105	65.2506	.0702
				2107	.04	2.12		2110	49.0113	.0762
				2113	.50	2.17		2115	40.1664	.0809
				2200	.01	2.18		2125	25.3854	.0878
				0800	.00	2.18		2135	20.4319	.0926
				0930	.02	2.21		2145	17.3648	.0966
				RG	R-3			2150	16.6039	.0984
				1815	.00	.00		2220	10.9768	.1071
				1835	.03	.01		2225	10.9530	.1083
				1837	.30	.02		2230	9.7642	.1093
				1845	2.85	.40		2235	9.7880	.1104
				1853	.90	.52		2250	8.2267	.1132
				1854	6.60	.63		2330	7.2915	.1197
				1854	6.60	.63		2340	7.2756	.1213
				1930	.15	.72		2345	6.7922	.1220
				1934	.30	.74		2350	6.7922	.1227
				1940	1.40	.88		2400	6.1185	.1241
				1948	.15	.90		0010	5.4765	.1253
				1954	1.60	1.06		0015	5.4765	.1259
				2000	1.00	1.16		0020	5.1119	.1264
2005	1.20	1.26	0025	4.6602	.1270					
2010	1.92	1.42	0030	4.6840	.1274					
2015	1.20	1.52	0050	3.7805	.1292					
2030	1.52	1.90	0055	3.7805	.1296					
2039	1.47	2.12	0110	3.1861	.1307					
2045	.40	2.16	0115	3.1861	.1311					
2110	.02	2.17	0125	2.8215	.1317					
2115	.60	2.22	0130	2.8373	.1320					
2240	.01	2.24	0140	2.6471	.1326					
0800	.00	2.24	0145	2.4965	.1328					
0900	.02	2.26	0150	2.4965	.1331					
RG	R-4		0200	2.1716	.1336					
1800	.00	.00	0210	2.1795	.1341					
1805	.12	.01	0220	2.0369	.1345					
1833	.11	.06	0235	1.7753	.1351					
1835	.60	.08	0245	1.7753	.1355					
1840	3.12	.34	0300	1.5058	.1360					
1845	.72	.40	0330	1.3077	.1369					
1905	.06	.42	0405	1.1016	.1378					
1908	.40	.44	0455	.9194	.1388					
1918	.06	.45	0600	.7608	.1400					
1923	.24	.47	0725	3/.6182	.1412					
1930	.09	.48	0945	.4993	.1428					
			1255	.3883	.1446					

NOTES: TO CONVERT CFS TO IN/HR, MULTIPLY BY 0.0012618. FOR 30-DAY ANTECEDENT P AND Q, SEE DAILY TABLES ON PREVIOUS PAGE. 1/ THIESSEN WEIGHTED FOR RG R-1, R-2, R-3, AND R-4. 2/ CONTINUOUS FLOW PRIOR TO 1900. 3/ RUNOF SLOWLY RECEDES TO BASE FLOW.

NOTES: TO CONVERT CFS TO IN/HR, MULTIPLY BY 0.0012618. FOR 30-DAY ANTECEDENT P AND Q, SEE DAILY TABLES ON PREVIOUS PAGE. 1/ THIESSEN WEIGHTED FOR RG R-1, R-2, R-3, AND R-4. 2/ CONTINUOUS FLOW PRIOR TO 1900. 3/ RUNOFF SLOWLY RECEDES TO BASE FLOW.

1967			SELECTED RUNOFF EVENT				BLACKSBURG, VIRGINIA				CRAB CREEK W-I		13.07	
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF							
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)				
Event of August 4 and 5, 1967 - Continued														
8 -4	RG		8 -4		R-4		8 -5							
	1945			.48	.60	1625		.3012	.1461					
	1950			4.32	.96	2400		.2536	.1488					
	2000			1.68	1.24									
	2008			2.03	1.51									
	2015			3.51	1.92									
	2025			1.92	2.24									
	2030			4.08	2.58									
	2035			1.08	2.67									
8 -5	2045			.12	2.69									
	2102			.04	2.70									
	2110			.60	2.78									
	2200			.02	2.80									
	0800			.00	2.80									
	0900			.01	2.81									
	RG			R-1	2.56									
	4 RG			AVG 1/	2.30									

NOTES: TO CONVERT CFS TO IN/HR, MULTIPLY BY 0.0012618. 1/ THIESSEN WEIGHTED FOR RG R-1, R-2, R-3, AND R-4.



BLACKSBURG, VIRGINIA CRAB CREEK W-I

MONTHLY PRECIPITATION AND RUNOFF (inches)						BLACKSBURG, VIRGINIA BRUSH CREEK W-I 13.08 AREA—893 ACRES (1.40 SQ. MILES)										
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	P ¹ / _Q	1.80	1.71	4.27	1.81	4.04	.82	3.44	5.47	1.71	2.50	1.15	3.62	32.34		
		1.54	1.10	2.26	1.07	1.18	.66	.63	.81	.56	.71	.62	1.09	12.23		
STA AVG ² / _Q		2.20	3.11	3.28	2.85	3.49	2.15	3.81	3.86	3.83	2.74	2.52	2.94	36.78		
	(57-67)	1.68	1.98	2.44	1.92	1.60	.96	.93	.91	1.18	1.21	1.23	1.59	17.63		
MEAN ³ / _P		3.16	3.07	3.63	3.12	3.66	4.04	4.63	3.97	3.02	2.73	2.34	3.03E	40.40E		
77 YR																
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	3-7	.09	3-7	.08	3-7	.14	3-7	.25	3-6	.33	3-6	.41	3-6	.49	3-6	1.08
MAXIMUMS FOR PERIOD OF RECORD																
1957 TO 1967	9-30 1959	1.16	9-30 1959	.62	9-30 1959	.91	9-30 1959	1.62	9-30 1959	2.17	9-29 1959	2.59	9-29 1959	2.81	9-29 1959	3.23
Notes: Watershed conditions: Permanent pasture, usually a fair cover of native grasses, 33%; farm woods, a mixture of hardwoods and conifers, 32%; corn, 5%; hay, 20%; total cultivated, 25%; idle land, 8%; roads, 2%. 1/ Precipitation Thiessen weighted from R-1 and R-2. 2/ Determined from continuous records from August, 1957 through 1967, precipitation Thiessen weighted. 3/ Mean P based on 77-yr (1891-1967) U.S. Weather Bureau record period at Blacksburg, Virginia. Missing records for 11 months were estimated from nearby Weather Bureau records at Christiansburg, Va. and Va. Agr. Expt. Station at Blacksburg, Va.																
1967 DAILY PRECIPITATION (inches)						BLACKSBURG, VIRGINIA BRUSH CREEK W-I 13.08										
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC				
1	.00	.00	.00	.00	.04	.20	.04	.00	.00	.00	.02	.00				
2	.00	.06	.00	.00	.48	.02	.11	.04	.00	.00	.21	.13				
3	.00	.00	.00	.00	.00	.02	.00	.00	.00	.00	.00	.80				
4	.11M	.00	.06	.00	.19	.15	.00	.16	.00	.00	.00	.00				
5	.03S	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00				
6	.00	.12S	.54	.00	.01	.00	.23	.00	.00	.01	.00	.00				
7	.00	.22S	1.19	.00	.61	.00	.00	.34	.00	.05	.00	.00				
8	.20	.00	.00	.00	.25	.00	.08	.00	.00	.00	.00	.00				
9	.00	.08S	.00	.00	.01	.00	.02	.01	.54	.32	.00	.08				
10	.00	.02S	.00	.05	.00	.00	.11	.00	.01	.25	.00	.79				
11	.00	.00	.00	.00	.03	.00	.00	.00	.00	.00	.00	.22				
12	.00	.00	.51	.00	.00	.00	.00	.00	.00	.00	.00	.01				
13	.08	.00	.94	.19	.00	.00	.02	.00	.00	.00	.00	.00				
14	.35	.00	.00	.00	.19	.00	.04	.00	.00	.00	.00	.00				
15	.00	.00	.51	.00	.40	.00	.00	.00	.00	.00	.00	.00				
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00				
17	.00	.76M	.00	.35	.04	.00	.53	.00	.00	.00	.00	.00				
18	.00	.09M	.00	.00	.00	.00	1.18	.00	.00	.85	.00	.17				
19	.12S	.00	.00	.00	.30	.02	.05	.07	.00	.00	.00	.01				
20	.00	.36	.07M	.00	.00	.00	.60	.04	.06	.00	.00	.00				
21	.00	.00	.41	.03	.42	.00	.00	1.27	.09	.00	.05	.00				
22	.00	.00	.00	.23	.23	.29	.00	.85	.00	.00	.13	.28				
23	.00	.00	.00	.00	.00	.00	.00	.20	.00	.00	.07	.00				
24	.00	.00	.02	.01	.00	.00	.00	1.69	.00	.00	.06	.00				
25	.00	.00	.00	.00	.00	.07	.00	.06	.00	.99	.00	.01				
26	.00	.00	.00	.82	.00	.00	.00	.00	.00	.00	.00	.00				
27	.91	.00	.00	.13	.00	.00	.00	.16	.14	.00	.00	.00				
28	.00	.00	.02	.00	.00	.00	.00	.00	.87	.00	.00	.91S				
29	.00	-----	.00	.00	.36	.00	.00	.00	.00	.00	.00	.01				
30	.00	-----	.00	.00	.15	.05	.16	.00	.00	.00	.61	.00				
31	.00	-----	.00	---	.33	---	.27	.58	-----	.03	---	.20S				
TOTAL	1.80	1.71	4.27	1.81	4.04	.82	3.44	5.47	1.71	2.50	1.15	3.62				
STA AV	2.20	3.11	3.28	2.85	3.49	2.15	3.81	3.86	3.83	2.74	2.52	2.94				
NOTES: PRECIPITATION AMOUNTS ARE THIESSEN WEIGHTED VALUES FROM GAGES R-1 AND R-2. STA AV IS FOR PERIOD AUGUST 1957 THROUGH 1967. FOR TOPOGRAPHIC (REVISED DRAINAGE PATTERN) MAP OF WATERSHED SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1964, MISC. PUB.1194, P. 13.8-5.																

1967 MEAN DAILY DISCHARGE (cfs)						BLACKSBURG, VIRGINIA			BRUSH CREEK W-I		13.08	
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	1.59	1.38	1.23	1.39	1.27	1.68	.58	.65	.98	.63	.79	1.07
2	1.80	1.44	1.40	1.33	1.68	1.30	.71	.64	.70	.61	1.03	.97
3	1.79	1.29	1.54	1.33	1.50	1.20	.58	.58	.65	.60	.87	4.01
4	1.66	1.26	1.54	1.29	1.40	1.34	.53	.59	.63	.57	.79	1.30
5	1.43	1.27	1.51	1.28	1.35	1.08	.50	.61	.64	.57	.74	1.06
6	1.35	1.21	1.89	1.31	1.32	1.00	.72	.52	.62	.57	.70	.99
7	2.77	1.26	15.30	1.25	2.73	.93	.68	.71	.59	.64	.74	.99
8	5.32	1.14	2.93	1.21	1.81	.93	.77	.63	.58	.67	.70	.96
9	2.86	1.16	2.12	1.22	1.52	.84	.64	.53	1.18	.98	.79	1.00
10	2.11	1.23	1.86	1.34	1.32	.86	.59	.52	.89	1.08	.72	3.06
11	1.53	1.41	1.74	1.20	1.30	.77	.65	.45	.70	.75	.72	2.29
12	1.40	1.27	3.20	1.21	1.21	.76	.54	.46	.62	.70	.70	1.78
13	1.52	1.28	9.69	1.47	1.21	.73	.59	.44	.64	.70	.70	1.31
14	2.79	1.48	3.60	1.30	1.37	.71	.54	.43	.59	.67	.70	1.21
15	1.87	1.40	4.90	1.21	1.89	.67	.53	.40	.60	.69	.67	1.11
16	1.53	1.24	2.88	1.16	1.44	.67	.52	.40	.58	.66	.70	1.03
17	1.42	1.28	2.25	1.58	1.23	.64	.97	.39	.57	.68	.74	1.01
18	1.23	1.29	1.87	1.39	1.18	.70	2.56	.40	.55	2.14	.72	1.22
19	1.18	1.48	1.85	1.12	1.38	.68	1.09	.43	.55	.89	.66	1.11
20	1.26	3.62	2.01	1.14	1.31	.70	2.04	.49	.58	.74	.68	1.01
21	1.37	2.93	3.00	1.21	1.70	.65	1.14	1.84	.64	.72	.69	.99
22	1.39	1.85	2.00	1.47	2.02	.80	.72	2.73	.60	.68	.84	1.52
23	1.37	1.69	1.82	1.21	1.50	.78	.62	1.24	.57	.67	.91	1.09
24	1.32	1.33	1.70	1.12	1.25	.64	.61	6.72	.55	.68	.81	.99
25	1.24	1.54	1.68	1.08	1.17	.62	.61	1.65	.54	3.06	.79	1.08
26	1.21	.91	1.63	2.73	1.08	.60	.62	1.04	.51	1.14	.70	1.02
27	5.00	1.25	1.58	1.95	1.01	.58	.54	1.10	.59	.96	.70	.96
28	2.07	1.34	1.62	1.33	.91	.58	.54	.88	1.91	.85	.66	1.47
29	1.60	-----	1.55	1.19	1.22	.60	.57	.74	.87	.81	.67	1.24
30	1.46	-----	1.48	1.21	1.22	.64	.65	.68	.67	.78	1.62	1.06
31	1.42	-----	1.40	-----	1.86	-----	.75	1.54	-----	.78	-----	1.10
MEAN	1.87	1.47	2.74	1.34	1.43	.82	.76	.98	.70	.86	.78	1.32
INCHES	1.54	1.10	2.26	1.07	1.18	.66	.63	.81	.56	.71	.62	1.09

NOTES TO CONVERT CFS TO IN/DAY, MULTIPLY BY 0.026654.

1967			SELECTED RUNOFF EVENT				BLACKSBURG, VIRGINIA		BRUSH CREEK W-I		13.08	
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF					
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)		
Event of March 6-9, 1967												
3 -6	2 RG 1/ .00	2/.0359	3 -6	RG	R-2		3 -6	2045	1.6388	.0000		
				1800	.00	.00		2150	1.7739	.0021		
				1830	.04	.02		2155	1.8729	.0022		
				1930	.03	.05		2200	1.8729	.0024		
				2005	.02	.06		2210	2.0800	.0028		
				2045	.02	.07						
				2130	.04	.10		2215	2.1160	.0029		
				2150	.09	.13		2220	2.3591	.0032		
				2200	.24	.17		2225	2.4582	.0034		
				2212	.15	.20		2250	3.8989	.0048		
				2230	.67	.40		2255	4.4031	.0052		
				2245	.16	.44		2300	4.7633	.0056		
				2325	.08	.49		2305	5.2946	.0061		
				2331	.30	.52		2310	5.6547	.0066		
				2345	.30	.59		2320	7.0144	.0078		
				2400	.04	.60		2325	7.8968	.0085		
Watershed conditions												
Pasture, fair cover of native grass mixture, dormant, 1/2 to 1 in. tall, 33%; woods, mixture of dormant hardwood and conifers, good cover of mulch 3 to 4 in. high, 32%; cultivated, poor, sparse cover of dormant grass and weeds with some corn stover, 5%; hay, fair cover of dormant alfalfa and grass mixture, 1 to 2 in. high, 8%; paved roads, 2%.												
3 -7			3 -7	0010	.06	.61	3 -7	2330	8.5091	.0092		
				0020	.30	.66		2335	8.7252	.0100		
				0030	.18	.69		2340	9.2565	.0109		
				0043	.09	.71		2400	10.2110	.0145		
				0140	.23	.93		0035	10.4721	.0212		
				0150	.18	.96		0045	11.0844	.0232		
				0215	.02	.97		0050	11.0844	.0242		
				0248	.02	.98		0120	13.0383	.0309		
				0300	.70	1.12		0125	13.6596	.0321		
				0315	.32	1.20		0145	14.9743	.0374		
				0320	.12	1.21		0150	14.9743	.0388		
				0330	.72	1.33		0210	16.4150	.0446		
				0337	.86	1.43		0240	17.0273	.0539		
				0350	.18	1.47		0245	16.6941	.0555		
				0400	.78	1.60		0305	18.0718	.0619		

NOTES: TO CONVERT CFS TO IN/HR, MULTIPLY BY 0.001106. FOR 30-DAY ANTECEDENT P AND Q, SEE DAILY TABLES ON THIS AND PREVIOUS PAGE. 1/ THIESSEN WEIGHTED FOR RG, R-1 AND R-2. 2/ CONTINUOUS FLOW PRIOR TO 2045.

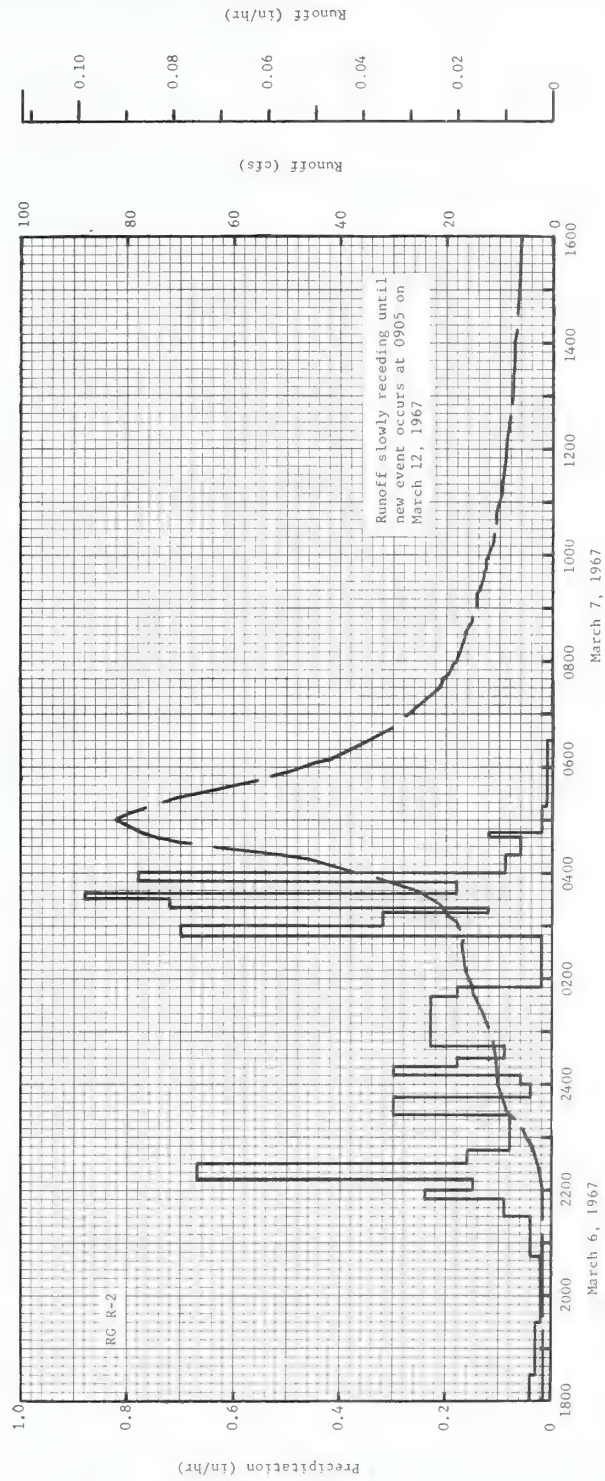
1967			SELECTED RUNOFF EVENT				BLACKSBURG, VIRGINIA				BRUSH CREEK W-I		13.08	
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF							
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)				
Event of March 6-9, 1967 - Continued														
				RG	R-2									
			3 -7	0420	.09	1.63	3 -7	0310	19.3594	.0637				
				0440	.06	1.65		0315	20.0618	.0655				
				0445	.12	1.66		0320	20.4669	.0674				
				0515	.02	1.67		0325	21.3854	.0693				
				0630	.01	1.68		0340	25.6805	.0758				
				RG	R-1	1.76		0350	30.8220	.0811				
				2 RG	AVG 1/	1.73		0355	33.1001	.0840				
								0400	36.5668	.0872				
								0405	39.5382	.0908				
								0410	42.0594	.0945				
								0415	45.8053	.0986				
								0420	50.6586	.1031				
								0430	63.9581	.1137				
								0435	70.0991	.1199				
								0440	74.0970	.1265				
								0445	77.1045	.1335				
								0450	79.0674	.1408				
								0455	80.1119	.1481				
								0500	82.1739	.1557				
								0505	80.7332	.1632				
								0515	76.4111	.1777				
								0520	73.2686	.1847				
								0525	71.1076	.1913				
								0535	62.6344	.2037				
								0540	59.4829	.2094				
								0545	55.7641	.2147				
								0550	52.9818	.2197				
								0555	49.4070	.2245				
								0605	44.7067	.2332				
								0610	41.7353	.2372				
								0630	34.5228	.2513				
								0635	33.3882	.2544				
								0645	30.0386	.2603				
								0730	21.4124	.2817				
								0740	20.5570	.2856				
								0745	19.7376	.2875				
								0755	18.9272	.2911				
								0800	18.1168	.2928				
								0825	16.2979	.3007				
								0830	16.2979	.3022				
								0845	15.2264	.3066				
								0850	15.2264	.3080				
								0900	14.4970	.3108				
								0915	14.1459	.3148				
								0920	13.8037	.3161				
								0925	13.8037	.3173				
								0935	13.1374	.3198				
								0940	13.0924	.3210				
								0945	12.4711	.3222				
								0955	12.5251	.3245				
								1015	11.2915	.3289				
								1020	11.3095	.3300				
								1035	10.6972	.3330				
								1045	10.7062	.3350				
								1055	10.3640	.3370				
								1110	9.8688	.3398				
								1120	9.8778	.3416				
								1130	9.5807	.3434				
								1145	9.0764	.3460				
								1210	8.8153	.3501				
								1225	8.2840	.3525				
								1300	7.7978	.3577				
								1320	7.7798	.3606				
								1335	7.3386	.3627				
								1400	7.3386	.3661				
												Continued on next page		

NOTES: TO CONVERT CFS TO IN/HR, MULTIPLY BY 0.0011106. 1/ THIESSEN WEIGHTED FOR RG R-1 AND R-2.

NOTES: TO CONVERT CFS TO IN/HR, MULTIPLY BY 0.0011106. 1/ THIESSEN WEIGHTED FOR RG R-1 AND R-2.

1967 SELECTED RUNOFF EVENT			BLACKSBURG, VIRGINIA BRUSH CREEK W-I 13.08							
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (cfs)	DATE MO-DAY	TIME OF DAY	INTENSITY (in./hr.)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)
Event of March 6-9, 1967 - Continued										
							3 -7	1415	6.8974	.3681
								1500	6.4832	.3737
								1545	1/ 6.0419	.3789
								1640	5.6097	.3848
								1745	5.2586	.3913
								1900	4.9074	.3984
								2020	4.5562	.4054
								2155	4.2050	.4131
								2345	3.8539	.4213
								2400	3.8539	.4224
							3 -8	0135	3.5657	.4289
								0400	3.2956	.4381
								0755	3.0165	.4518
								1435	2.8814	.4737
								1800	2.6023	.4841
								2320	2.3591	.4988
								2400	2.3591	.5005
							3 -9	0620	2.1520	.5164

NOTES: TO CONVERT CFS TO IN/HR, MULTIPLY BY 0.0011106. 1/ RUNOFF SLOWLY RECEDING UNTIL NEW EVENT OCCURRED AT 0905 ON 3-12-67.



BLACKSBURG, VIRGINIA BRUSH CREEK W-I

MONTHLY PRECIPITATION AND RUNOFF (inches)						BLACKSBURG, VIRGINIA POWELLS CREEK W-I AREA—182 ACRES								13.09		
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	P 1	1.73	2.88	1.35	1.57	4.53	2.35	2.05	6.77	2.34	1.51	1.35	5.75	34.18		
	Q	1.16	1.23	.48	.26	.37	.22	.20	.63	.21	.23	.25	1.65	6.89		
	STA AV 2/	3.02	3.37	3.37	2.94	3.83	2.55	4.33	4.56	2.63	3.07	2.47	3.18	39.32		
(58-67) 3/	1.70	2.00	2.05	1.29	.86	.33	.54	.58	.29	.69	.66	1.24	12.23			
77 YR MEAN	3.49	3.38	3.74	3.36	3.86	3.72	4.49	4.40	3.47	2.77	2.61	3.27	42.56			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	12-28	.14	12-28	.12	12-28	.17	12-28	.36	12-28	.45	12-28	.50	12-28	.54	12-22	.95
MAXIMUMS FOR PERIOD OF RECORD																
1958 TO	7-11	2.29	7-11	1.61	7-11	1.92	7-11	2.07	7-11	2.10	7-11	2.17	12-28	2.25	3-5	3.41
1967	1965		1965		1965		1965		1965		1965		1958		1963	
Notes: Watershed conditions: Farm woods, predominantly hardwood, 16%; pasture, native grass mixture, usually good to excellent cover, 50%; small grain, 1%; corn, 11%; tobacco, 1%; alfalfa & other hay crops, 15%; total cultivated 28%; idle land, 4%; roads, 2%. 1/ Precipitation Thiessen weighted from R-1 and R-2. 2/ Determined from continuous records from January, 1958 through 1967, precipitation Thiessen weighted. 3/ Mean P based on 77-yr. (1891-1967) U.S. Weather Bureau record period at Danville Bridge St., Virginia. Missing monthly totals for July and August, 1946 were estimated from nearby Weather Bureau records at Danville, Va., (Airport).																
1967 DAILY PRECIPITATION (inches)						BLACKSBURG, VIRGINIA POWELLS CREEK W-I								13.09		
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC				
1	.00	.00	.00	.00	.00	.13	.00	.00	.64	.00	.00	.00				
2	.00	.00	.00	.00	.38	.01	.74	.00	.00	.00	.05	.02				
3	.00	.00	.00	.00	.00	.08	.00	.00	.00	.00	.00	.82				
4	.45S	.00	.00	.00	.00	.00	.00	1.48	.00	.00	.00	.00				
5	.00	.00	.00	.00	.00	.00	.01	.01	.00	.00	.00	.00				
6	.00	.18S	.04	.00	.00	.00	.00	.00	.00	.72	.00	.00				
7	.01	.25S	.00	.00	1.10	.00	.00	.32	.00	.02	.00	.00				
8	.48	.00	.00	.00	.25	.00	.14	.00	.00	.00	.00	.00				
9	.01	.37S	.00	.00	.00	.00	.00	1.30	.65	.00	.00	.00				
10	.00	.00	.00	.05	.00	.00	.00	.00	.00	.19	.00	1.73				
11	.00	.00	.00	.00	.05	.00	.00	.00	.00	.00	.00	.22				
12	.00	.00	.17	.00	.18	.00	.00	.00	.00	.00	.00	.03				
13	.00	.00	.17	.10	.01	.00	.00	.00	.00	.00	.00	.00				
14	.37	.00	.00	.00	.10	.00	.31	.00	.00	.00	.00	.00				
15	.00	.00	.22	.00	.43	.00	.00	.00	.00	.00	.00	.00				
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00				
17	.00	1.35S	.00	.11	.00	.00	.28	.00	.00	.00	.00	.00				
18	.00	.34S	.00	.00	.00	.75	.02	.00	.00	.34	.00	.25				
19	.14S	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00				
20	.00	.36	.03	.00	.00	.00	.00	.14	.00	.00	.00	.00				
21	.00	.00	.53	.00	.27	.00	.00	.79	.24	.00	.04	.00				
22	.00	.00	.00	.07	.50	.26	.00	.33E	.00	.00	.07	1.26				
23	.00	.00	.00	.00	.10	.00	.00	1.11E	.00	.00	.15	.07				
24	.00	.00	.00	.00	.00	.00	.00	.56E	.00	.00	.60	.00				
25	.00	.00	.00	.00	.00	.00	.14	.69	.00	.24	.00	.00				
26	.00	.00	.00	1.22	.00	.00	.00	.00	.00	.00	.00	.00				
27	.27	.01M	.00	.02	.00	.00	.00	.04	.31	.00	.00	.00				
28	.00	.02M	.15	.00	.00	.00	.00	.00	.50	.00	.00	1.29S				
29	.00	-----	.04	.00	.23	.00	.00	.00	.00	.00	.01	.00				
30	.00	---	.00	.00	.27	1.12	.09	.00	.00	.00	.43	.00				
31	.00		.00		.66	---	.22	.00	---	.00	---	.06S				
TOTAL	1.73	2.88	1.35	1.57	4.53	2.35	2.05	6.77	2.34	1.51	1.35	5.75				
STA AV	3.02	3.37	3.37	2.94	3.83	2.55	4.33	4.56	2.63	3.07	2.47	3.18				
NOTES: PRECIPITATION AMOUNTS ARE THIESSEN WEIGHTED VALUES FROM GAGES R-1 AND R-2. STA AV IS FOR PERIOD OF JANUARY, 1958 THROUGH 1967. FOR TOPOGRAPHIC (REVISED DRAINAGE PATTERN) MAP OF WATERSHED SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1964, MISC. PUB.1194, P. 13.9-5.																

1967 MEAN DAILY DISCHARGE (cfs)						BLACKSBURG, VIRGINIA POWELLS CREEK W-I 13.09						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.48	.13	.13	.08	.05	.11	.04	.03	.15	.04	.07	.07
2	.50	.13	.14	.08	.07	.09	.28	.04	.06	.05	.05	.06
3	.37	.12	.13	.07	.07	.08	.07	.03	.05	.04	.05	.41
4	.82	.12	.13	.06	.05	.06	.04	.30	.05	.04	.06	.08
5	.52	.12	.13	.07	.06	.06	.04	.05	.05	.04	.06	.06
6	.32	.14	.13	.06	.05	.05	.04	.04	.05	.09	.06	.06
7	.29	.20	.14	.06	.42	.05	.04	.05	.04	.06	.06	.06
8	1.00	.14	.13	.06	.12	.05	.04	.04	.04	.05	.06	.05
9	.42	.15	.12	.06	.09	.05	.04	.74	.07	.05	.06	.05
10	.29	.16	.10	.06	.07	.04	.04	.07	.07	.05	.06	2.43
11	.24	.41	.10	.06	.06	.04	.04	.04	.05	.05	.05	.33
12	.22	.20	.11	.05	.07	.04	.04	.04	.04	.05	.06	.38
13	.20	.16	.15	.06	.06	.04	.04	.04	.04	.05	.05	.13
14	.43	.15	.11	.06	.07	.04	.04	.04	.05	.05	.05	.11
15	.22	.15	.15	.06	.13	.04	.04	.04	.04	.05	.05	.11
16	.18	.14	.11	.05	.09	.03	.04	.04	.04	.05	.05	.09
17	.17	1.73	.09	.06	.06	.03	.05	.04	.04	.05	.05	.08
18	.15	1.78	.09	.06	.06	.06	.04	.04	.04	.07	.05	.12
19	.15	.48	.08	.05	.05	.04	.04	.04	.04	.06	.06	.12
20	.19	1.08	.08	.05	.05	.04	.04	.05	.04	.05	.06	.10
21	.20	.47	.28	.05	.06	.04	.04	.08	.05	.05	.05	.10
22	.17	.26	.12	.06	.11	.05	.03	.09	.05	.05	.06	1.65
23	.16	.22	.11	.05	.13	.04	.03	.52	.04	.05	.07	.89
24	.15	.19	.10	.05	.06	.04	.04	.84	.04	.05	.14	.20
25	.14	.14	.10	.05	.05	.05	.04	.75	.04	.07	.09	.16
26	.14	.13	.10	.23	.05	.04	.04	.40	.04	.06	.06	.13
27	.23	.15	.10	.08	.05	.04	.03	.08	.05	.05	.06	.11
28	.16	.17	.10	.06	.05	.04	.04	.06	.08	.05	.05	3.70
29	.13	-----	.11	.06	.06	.05	.04	.05	.05	.05	.05	.37
30	.13	-----	.09	.05	.06	.24	.03	.05	.05	.06	.13	.20
31	.13	-----	.08	-----	.34	-----	.04	.05	-----	.06	-----	.24
MEAN	.29	.34	.12	.07	.09	.06	.05	.15	.05	.06	.06	.41
INCHES	1.16	1.23	.48	.26	.37	.22	.20	.63	.21	.23	.25	1.65

NOTES TO CONVERT CFS TO IN/DAY, MULTIPLY BY 0.130779.

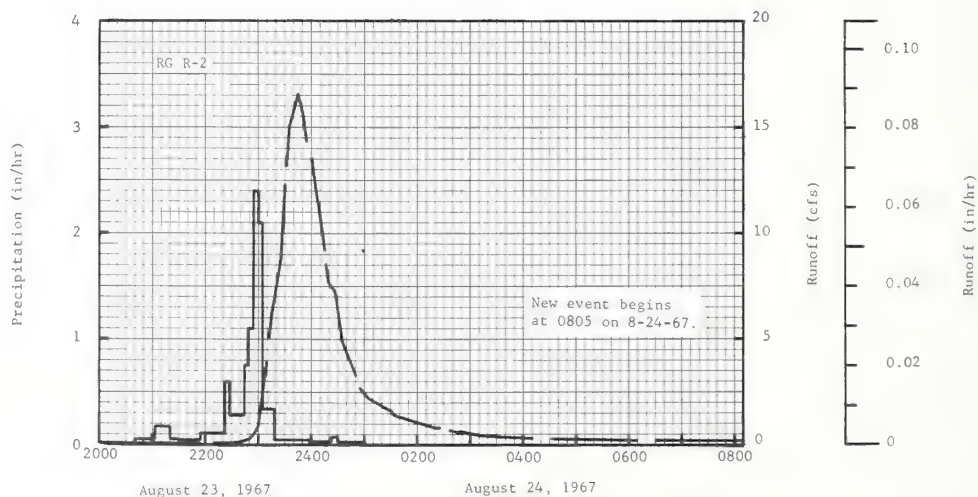
1967 SELECTED RUNOFF EVENT			BLACKSBURG, VIRGINIA				POWELLS CREEK W-I		13.09					
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF							
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)				
Event of August 23 and 24, 1967														
8-23	RG R-1	2/.0096	8-23	RG	R-2		8-23	2210	.0826	.0000				
	1/ .14			2040	.00			.00	2220	.1028	.0001			
				2103	.05			.02	2225	.1156	.0001			
	RG R-2			2120	.18			.07	2230	.1156	.0002			
				2130	.06			.08	2235	.1431	.0002			
	3/ .13			2155	.05			.10						
				2222	.11			.15	2240	.1890	.0003			
				2227	.60			.20	2250	.2569	.0005			
				2244	.28			.28	2255	.5028	.0007			
				2248	.75			.33	2300	.9139	.0010			
				2254	1.10			.44	2305	2.2114	.0017			
				2300	2.40			.68	2310	3.9566	.0031			
				2304	2.10			.82	2315	6.2304	.0054			
				2318	.34			.90	2325	8.8895	.0123			
				2400	.04			.93	2330	12.3121	.0171			
Watershed conditions			8-24	0022	.03	.94	8-24	2335	15.0942	.0233				
Pasture, good cover of native grass mixture 3 to 4 in. high, 50%; woods, mixture of hardwood and conifers, good cover, 16%; corn, 6 to 7 ft. high, good cover, 11%; small grain stubble with some weeds, good cover, 1%; tobacco, 2½ to 3 ft. high, good cover, 17; hay, alfalfa, mixed with grasses 4 to 8 in. high, good cover, 15%; idle, weeds and grass 2 to 3 ft. high, good cover, 4%; paved roads, 2%.				0030	.08	.95		2345	16.5898	.0377				
				0100	.02	.96		2350	15.7071	.0450				
				RG	R-1	1.04		2355	14.2904	.0519				
				2 RG	AVG 4/	1.01		2400	13.5820	.0582				
								0005	12.1543	.0640				
								0010	10.9706	.0693				
								0020	7.8049	.0778				
								0025	7.3315	.0812				
								0035	4.9329	.0868				
								0050	3.2629	.0924				
				Continued on next page										

Continued on next page

NOTES: TO CONVERT CFS TO IN/HR, MULTIPLY BY 0.0054491. FOR 30-DAY ANTECEDENT P AND Q, SEE DAILY TABLES ON THIS AND PREVIOUS PAGE. 1/ .09 IN. FROM 0020 TO 0300; .03 IN. FROM 0530 TO 0630; .02 IN. FROM 1850 TO 1930. 2/ CONTINUOUS FLOW PRIOR TO 2210. 3/ .08 IN. FROM 0020 TO 0300; .03 IN. FROM 0530 TO 0630; .02 IN. FROM 1850 TO 1930. 4/ THIESSEN WEIGHTED FOR RG R-1 AND R-2.

1967 SELECTED RUNOFF EVENT			BLACKSBURG, VIRGINIA				POWELLS CREEK W-I		13.09	
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)
			Event of August 23-24, 1967 - Continued							
							8-24	0055	2.7179	.0938
								0105	2.2040	.0960
								0130	1.6755	.1004
								0135	1.4773	.1011
								0220	.8203	.1058
								0225	.8203	.1062
								0245	.6001	.1075
								0250	.6019	.1077
								0300	.5469	.1083
								0310	.4955	.1087
								0320	.4551	.1092
								0335	.3762	.1097
								0410	.3083	.1108
								0500	.2459	.1121
								0630	.1945	.1139
								0805	1/.2000	.1156

NOTES: TO CONVERT CFS TO IN/HR, MULTIPLY BY 0.0054491. 1/ NEW EVENT BEGINS AT 0805 ON 8-24-67.



BLACKSBURG, VIRGINIA POWELLS CREEK W-I

MONTHLY PRECIPITATION AND RUNOFF (inches)						BLACKSBURG, VIRGINIA LITTLE WINNS CREEK W-I 13.10 AREA—1471 ACRES (2.30 SQ. MILES)										
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967 P ₁ Q	1.73 .57	3.28 .91	1.14 .46	1.49 .36	4.46 .42	2.48 .28	4.75 .39	5.44 .41	2.57 .28	1.86 .23	1.29 .23	5.91 1.05	36.40 5.59			
STA AVG ² _P (58-67) O	3.20 .99	3.56 1.33	3.32 1.36	2.97 1.04	3.61 .89	3.00 .59	3.94 .49	4.66 .60	2.93 .40	3.14 .68	2.41 .54	3.16 .85	39.90 9.76			
MEAN 37 YR P ₃	3.35	3.25	3.83	3.51	3.74	4.00	4.56	4.24	3.70	2.79	3.00	3.26	43.23			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	7-14	.05	7-14	.04	7-14	.06	12-28	.14	12-28	.20	12-28	.25	12-28	.29	2-17	.59
MAXIMUMS FOR PERIOD OF RECORD																
1958 TO 1967	10-10 1959	1.12	10-10 1959	.71	10-10 1959	1.03	10-10 1959	1.41	10-10 1959	1.51	10-10 1959	1.58	10-10 1959	1.62	10-10 1959	1.91
NOTES: Watershed conditions: Farm woods, mixture of hardwoods and conifers, with pine predominating, 58%; small grain 2%; corn, 5%; tobacco, 3%; alfalfa and other hay crops, 6%; other cultivated areas, 5%; total cultivated, 21%; pasture, native grass mixture, usually fair cover, 9%; idle land, 12%; conditions are consistent from year to year. 1/ Precipitation Thiessen weighted R-1, R-2 and R-3. 2/ Determined from continuous records from January, 1958 through 1967, precipitation Thiessen weighted. 3/ Mean P based on 37-yr (1931-67) U.S. Weather Bureau record period at Halifax (1 mile N), Virginia, thru July 1966 at which time station was closed. Thereafter, missing monthly totals were obtained from nearby Weather Bureau records at Halifax (2SSE), Virginia.																
1967 DAILY PRECIPITATION (inches)						BLACKSBURG, VIRGINIA LITTLE WINNS CREEK W-I 13.10										
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC				
1	.00	.00	.00	.00	.00	.13	.00	.00	.55	.00	.00	.00	.00			
2	.00	.00	.00	.00	.41	.03	.97	.00	.00	.00	.02	.02	.02			
3	.00	.00	.00	.00	.00	.05	.00	.00	.00	.00	.00	.95				
4	.31M	.00	.00	.00	.00	.00	.00	.82	.00	.00	.00	.00	.00			
5	.07S	.00	.00	.00	.00	.00	.00	.04	.00	.00	.00	.00	.00			
6	.00	.17S	.02	.00	.00	.00	.00	.00	.00	.31	.00	.00	.00			
7	.00	.34S	.00	.00	1.44	.00	.00	.40	.00	.08	.00	.00	.00			
8	.42	.00	.00	.00	.16	.00	.04	.00	.00	.00	.00	.00	.00			
9	.00	.46S	.00	.00	.00	.00	.00	1.35	.79	.00	.00	.00	.00			
10	.00	T	.00	.04	.00	.00	.00	.00	.00	.32	.00	1.71				
11	.00	.02S	.00	.00	.05	.00	.00	.00	.00	.00	.00	.20				
12	.00	.00	.12	.00	.21	.01	.00	.00	.00	.00	.00	.01				
13	.00	.00	.14	.10	.00	.00	.02	.00	.00	.00	.00	.00	.00			
14	.40	.00	.00	.00	.09	.00	1.68	.00	.00	.00	.00	.00	.00			
15	.00	.00	.16	.00	.08	.00	.00	.00	.00	.00	.00	.00	.00			
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00			
17	.00	1.55M	.00	.05	.00	.00	.66	.00	.00	.00	.00	.00	.00			
18	.00	.34M	.00	.00	.00	.63	.03	.00	.00	.83	.00	.32				
19	.14S	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00			
20	.00	.35	.02M	.00	.00	.00	.00	.09	.00	.00	.00	.00	.00			
21	.00	.00	.56	.00	.34	.00	.00	.58	.41	.00	.01	.00	.00			
22	.00	.00	.00	.05	.47	.24	.00	.29	.00	.00	.09	1.21				
23	.00	.00	.00	.00	.11	.00	.00	.50	.00	.00	.16	.21				
24	.00	.00	.00	.00	.00	.00	.00	.55	.00	.00	.60	.00	.00			
25	.00	.00	.00	.00	.00	.00	.72	.16	.00	.32E	.00	.00	.00			
26	.00	.00	.00	1.24	.00	.00	.00	T	.00	.00	.00	.00	.00			
27	.39	.00	.00	.01	.00	.00	.00	.06	.09	.00	.00	.00	.00			
28	.00	.05M	.03	.00	.00	.00	.00	.00	.73	.00	.00	1.28S				
29	.00	-----	.09	.00	.39	.00	.00	.00	.00	.00	T	.00	.00			
30	.00	-----	.00	.00	.03	1.39	.56	.00	.00	.00	.41	.00	.00			
31	.00	-----	.00	-----	.68	-----	.07	.60	-----	.00	-----	T	.00			
TOTAL	1.73	3.28	1.14	1.49	4.46	2.48	4.75	5.44	2.57	1.86	1.29	5.91				
STA AV	3.20	3.56	3.22	2.97	3.61	3.00	3.94	4.66	2.93	3.14	2.41	3.16				
NOTES: PRECIPITATION AMOUNTS ARE THIESSEN WEIGHTED VALUES FROM GAGES R-1, R-2 AND R-3. STA AV IS FOR PERIOD JANUARY 1958 THROUGH 1967. FOR DRAINAGE PATTERN MAP OF WATERSHED SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, MISC. PUB. 994, P. 13.10-8.																

1967 MEAN DAILY DISCHARGE (cfs)						BLACKSBURG, VIRGINIA LITTLE WINNS CREEK W-I 13.10						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	1.18	.85	1.05	.82	.68	.74	.50	.44	3.39	.38	.45	.56
2	1.30	.81	1.02	.79	.71	.68	1.50	.41	.62	.38	.46	.55
3	1.64	.79	.99	.79	.74	.62	.83	.38	.53	.39	.44	2.88
4	1.76	.76	.95	.76	.66	.60	.48	2.01	.48	.40	.42	.73
5	1.43	.80	.95	.78	.65	.58	.45	.55	.50	.45	.42	.63
6	1.26	.89	.96	.78	.66	.54	.44	.45	.43	.49	.42	.60
7	1.07	.94	.91	.77	3.94	.53	.48	.62	.45	.50	.42	.59
8	1.74	.77	.82	.73	1.34	.50	.48	.51	.31	.46	.45	.58
9	1.66	1.02	.87	.73	.99	.50	.47	6.36	.69	.45	.44	.55
10	1.23	.96	.88	.76	.83	.49	.42	1.40	.65	.57	.46	9.27
11	1.08	1.26	.67	.73	.79	.46	.41	.68	.45	.45	.48	2.96
12	1.09	1.14	.91	.71	.87	.43	.39	.60	.45	.42	.46	1.77
13	1.08	1.09	.97	.76	.79	.42	.44	.54	.46	.42	.46	1.13
14	1.60	1.21	.89	.75	.79	.46	4.47	.49	.45	.43	.46	.96
15	.79	1.13	.97	.71	.75	.46	1.66	.48	.41	.42	.44	.89
16	1.11	1.05	.89	.68	.69	.44	.55	.45	.42	.43	.44	.79
17	.81	6.47	.82	.71	.68	.43	1.61	.45	.44	.42	.46	.76
18	1.00	7.41	.82	.70	.65	.71	.92	.44	.43	1.16	.46	.87
19	.72	3.34	.82	.68	.64	.53	.59	.41	.42	.46	.46	.84
20	.95	7.44	.86	.67	.59	.45	.54	.47	.49	.44	.46	.76
21	.97	5.77	1.36	.65	.69	.44	.51	.77	.48	.42	.46	.76
22	.89	2.47	1.04	.70	.78	.51	.50	.67	.43	.42	.46	3.06
23	.89	1.92	.92	.65	.81	.53	.47	.72	.39	.42	.54	6.17
24	.89	1.39	.89	.67	.64	.44	.43	1.31	.38	.41	.64	1.80
25	.85	1.23	.89	.62	.60	.41	1.65	.85	.47	.54	.71	1.39
26	.86	1.20	.86	1.48	.59	.41	.55	.65	.43	.46	.50	1.22
27	1.68	1.15	.82	.86	.56	.38	.44	.57	.39	.42	.50	1.05
28	.95	1.17	.84	.71	.52	.37	.43	.52	.88	.42	.50	13.23
29	.93	-----	.90	.68	.70	.38	.41	.48	.47	.42	.48	4.37
30	.87	-----	.82	.68	.64	2.55	.75	.45	.53	.44	.72	1.98
31	.86	-----	.79	-----	1.06	-----	.46	.47	-----	.46	-----	1.50
MEAN	1.13	2.02	.91	.75	.84	.57	.78	.83	.58	.46	.48	2.10
INCHES	.57	.91	.46	.36	.42	.28	.39	.41	.28	.23	.23	1.05

NOTES TO CONVERT CFS TO IN/DAY, MULTIPLY BY 0.016181.

1967 SELECTED RUNOFF EVENT						BLACKSBURG, VIRGINIA LITTLE WINNS CREEK W-I 13.10						
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF					
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)		
Event of July 14 and 15, 1967												
7-14	RG R-1 1/ .22	2/ 0085	7-14	RG 2052	R-2 .00	.00	7-14	2100	.6675	.0000		
	RG R-2			2058	.10	.01		2105	.5933	.0000	T	
				2100	3.00	.11		2115	1.5426	.0002		
7-14	3/ .28			2110	3.24	.65		2120	1.6612	.0002		
				2125	2.20	1.20		2125	2.0766	.0004		
	RG R-3			2127	1.50	1.25		2130	3.6785	.0005		
				2145	.03	1.26		2135	4.8799	.0008		
7-14	4/ .27			2200	.20	1.31		2140	8.0244	.0011		
				2210	.18	1.34		2145	20.5282	.0019		
				2300	.01	1.35		2150	31.8009	.0034		
Watershed conditions												
Woods, mixture of hardwood and conifers, good cover, 58%; idle, weeds and grass, good to excellent cover, 12%; pasture, mostly native grass 3 to 4 in. high, good cover, 9%; corn, 4 to 5 ft. high, fair cover, 5%; tobacco, 1 to 1½ ft. tall, fair cover, 3%; hay, mostly clovers and grass, good cover, 6%; idle, good cover, 5%; small grain stubble, fair cover, 2%.			7-14	RG	R-3	.00		2155	40.4780	.0054		
				2102	.00	.00		2200	45.3875	.0078		
				2105	2.00	.10		2205	52.2550	.0106		
				2110	4.80	.50		2210	53.4119	.0135		
								2215	57.4909	.0167		
				2120	4.20	1.20		2220	60.9765	.0200		
				2128	3.98	1.73		2225	76.4172	.0238		
				2130	.60	1.75		2230	74.8598	.0281		
				2150	.09	1.78		2235	71.8636	.0322		
				2200	.30	1.83		2240	70.3655	.0362		
				2230	.06	1.86		2245	60.5464	.0399		
				2330	.03	1.89		2250	53.1746	.0431		
				RG	R-1	1.11		2255	47.7756	.0459		
				3 RG	AVG 5/	1.42		2300	41.3234	.0484		
								2310	32.3942	.0526		
								2315	29.0866	.0543		
								2320	26.7134	.0559		
								2325	22.3823	.0572		
								2330	20.6469	.0584		
								2335	18.0660	.0595		

NOTES: TO CONVERT CFS TO IN/HR, MULTIPLY BY 0.0006742. FOR 30-DAY ANTECEDENT P AND Q, SEE DAILY TABLES ON THIS AND PREVIOUS PAGE. 1/ .22 IN. FROM 0900 TO 1300. 2/ CONTINUOUS FLOW PRIOR TO 2100. 3/ .28 IN. FROM 0800 TO 1050. 4/ .27 IN. FROM 0810 TO 1120. 5/ THIESSEN-WEIGHTED FOR RG R-1, R-2 AND R-3.

1967 SELECTED RUNOFF EVENT			BLACKSBURG, VIRGINIA				LITTLE WINNS CREEK W-I 13.10			
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)
			Event of July 14-15, 1967 - Continued							
							7-14	2340	16.6718	.0605
								2345	15.5000	.0614
								2350	14.8622	.0623
								2355	13.9426	.0631
								2400	12.8153	.0638
							7-15	0010	11.2431	.0652
								0025	9.4483	.0669
								0030	9.4187	.0674
								0035	8.2617	.0679
								0040	8.0689	.0684
								0045	7.8167	.0689
								0050	7.3124	.0693
								0055	6.8081	.0697
								0105	6.6153	.0704
								0110	5.9033	.0708
								0120	5.4732	.0714
								0125	5.0727	.0717
								0145	4.4794	.0728
								0150	4.4053	.0730
								0155	4.0344	.0733
								0205	4.1234	.0737
								0230	3.3225	.0748
								0235	3.3670	.0750
								0245	3.1593	.0753
								0255	3.1148	.0757
								0305	2.8923	.0760
								0315	2.7588	.0764
								0325	2.6105	.0767
								0340	2.3880	.0771
								0350	2.3880	.0773
								0405	2.1359	.0777
								0440	1.9431	.0785
								0520	1.7947	.0794
								0605	1.5574	.0802
								0655	1.3794	.0810
								0800	1.2311	.0820
								0930	1.0679	.0832
								1105	.9493	.0842
								1320	.9493	.0857
								1445	1/ .8010	.0865
								1720	.6971	.0878
								2310	.6081	.0904

NOTES: TO CONVERT CFS TO IN/HR, MULTIPLY BY 0.0006742. 1/ RUNOFF SLOWLY RECEDING TO BASE FLOW.

NOTES: TO CONVERT CFS TO IN/HR, MULTIPLY BY 0.0006742. ^{1/} RUNOFF SLOWLY RECEDING TO BASE FLOW.



BLACKSBURG, VIRGINIA LITTLE WINNS CREEK W-I

MONTHLY PRECIPITATION AND RUNOFF (inches)						BLACKSBURG, VIRGINIA ROCKY RUN BRANCH W-I 13.11 AREA—555 ACRES							
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1967 P ₁	2.14	3.92	1.44	1.47	4.73	3.72	1.90	5.16	2.41	1.13	1.76	4.92	34.70
O	.74	1.05	.56	.36	.51	.26	.18	.20	.12	.11	.14	.54	4.77
STA AVG P ₂	3.04	3.56	3.03	2.33	3.50	4.22	4.14	3.86	3.12	2.69	2.43	3.06	38.98
(58-67) O	.93	1.31	1.37	.94	.93	.68	.48	.37	.31	.39	.51	.76	8.98
MEAN P ₃	3.17	3.33	3.37	3.21	3.87	4.12	5.81	5.10	3.82	2.37	2.74	3.18	44.09
37 YR P ₄													

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS

YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	5-7	.02	2-20	.02	2-20	.04	2-20	.10	2-20	.16	2-20	.22	2-20	.29	2-17	.67

MAXIMUMS FOR PERIOD OF RECORD

19 58 TO	6-7	.22	6-7	.19	5-8	.34	5-6	.71	5-6	.98	5-6	1.45	5-5	2.09	4-30	2.86
19 67	1961		1961		1958		1958		1958		1958		1958		1958	

Notes: Watershed conditions: Mixed cover; farm woods, mixture of hardwoods and conifers, 57%; permanent pasture, usually a good cover of native grass and clover mixture, 13%; alfalfa and other hay crops, 9%; corn, 4%; tobacco, 1%; other cultivated areas, 4%; total cultivated, 18%. Idle land, usually a good cover of tall weeds, vines and short growing plants, 10%; roads, 2%. 1/ Precipitation Thiessen weighted from R-1 and R-2. 2/ Determined from continuous records from April, 1958 through 1967, precipitation Thiessen weighted. 3/ Mean P based on 37-yr (1931-67) U.S. Weather Bureau record period at Emporia (1 mile WNW), Virginia. Missing monthly totals for Jan. thru May 1966, were estimated from nearby Weather Bureau records at Lawrenceville, (5W), Virginia.

1967 DAILY PRECIPITATION (inches)						BLACKSBURG, VIRGINIA ROCKY RUN BRANCH W-I 13.11							
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
2	.00	.00	.00	.00	.13	.00	.10	.00	.00	.00	.39	.00	
3	.00	.00	.00	.00	.03	.00	.00	.00	.00	.00	.00	1.01	
4	.41M	.00	.00	.00	.05	.00	.54	.90	.00	.00	.00	.00	
5	.05S	.00	.00	.00	.00	.00	.00	.17	.00	.00	.00	.00	
6	.00	.13S	.00	.00	.04	.00	.00	.00	.00	T	.00	.00	
7	.00	.49S	.27	.00	2.20	.00	.44	.06	.00	.16	.00	.00	
8	.23	.00	.00	.00	.16	.00	.04	.00	.00	.00	.00	.00	
9	.00	.53S	.00	.00	.00	.00	.00	.05	.40	.00	.00	.03	
10	.17	.23S	.00	.05E	.00	.00	.00	.05	.21	.44	.00	1.21	
11	.00	.00	.00	.00	.07	.00	.11	.05	.00	.00	.00	.18	
12	.00	.00	.00	.00	.00	.00	.00	.02	.00	.00	.00	.47	
13	.00	.00	.00	.05E	.00	.00	.03	.00	.00	.00	.00	.00	
14	.79	.00	.10	.00	.00	.00	.49	.00	.00	.00	.00	.00	
15	.00	.00	.08	.00	.05	.00	.01	.00	.00	.00	.00	.00	
16	.00	.00	.00	.00	.00	.00	.00	.00	.08	.00	.00	.00	
17	.00	1.33S	.00	.29	.00	.00	.00	.00	.01	.00	.00	.00	
18	.00	.10S	.00	.00	.00	1.94	.00	.00	.00	.20	.00	.28	
19	.36S	.10	.00	.00	.16	.00	.14	.11	.12	.00	.00	.00	
20	T	.77	.10E	.00	.00	.00	T	.01	.07	.00	.00	.00	
21	.00	.00	.80E	.00	.73	.00	.00	.62	.24	.00	.00	.00	
22	.00	.04	.00	.12	.25	.56	.00	.08	.00	.00	.12	.70	
23	.00	.01	.00	.01	.12	.00	.00	.77	.00	.00	.23	.21	
24	.00	.00	.00	.00	.00	.00	.00	1.48	.00	.00	.47	.00	
25	.00	.00	.00	.00	.00	.92	.00	.01	.00	.33	.00	.00	
26	.00	.00	.00	.90	.00	.20	.00	.00	.00	.00	.00	.00	
27	.13	.07S	.00	.05	.00	.00	.00	.73	.13	.00	.00	.00	
28	.00	.12M	.00	.00	.18	.00	.00	.00	1.15	.00	.00	.78S	
29	.00	-----	.09	.00	.05	.00	.00	.00	.00	.00	.00	.00	
30	.00	-----	.00	.00	.01	.10	.00	.00	.00	.00	.55	.00	
31	.00	-----	.00	-----	.50	-----	.00	.05	-----	.00	-----	.05S	
TOTAL	2.14	3.92	1.44	1.47	4.73	3.72	1.90	5.16	2.41	1.13	1.76	4.92	
STA AV	3.04	3.56	3.03	2.33	3.50	4.22	4.14	3.86	3.12	2.69	2.43	3.06	

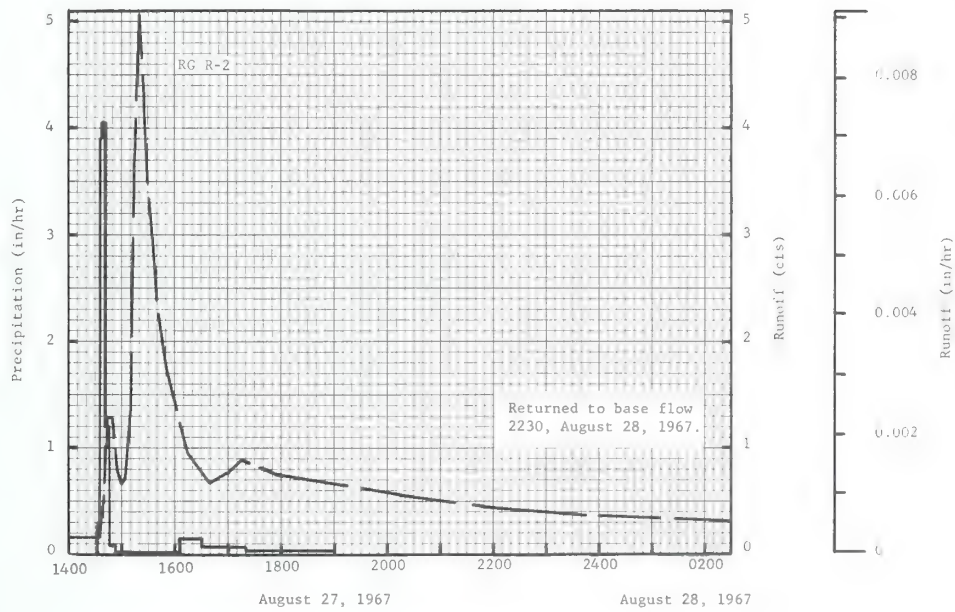
NOTES: PRECIPITATION AMOUNTS ARE THIESSEN WEIGHTED VALUES FROM GAGES R-1 AND R-2. STA AV IS FOR PERIOD APRIL 1958 THROUGH 1967. FOR TOPOGRAPHIC (REVISED DRAINAGE PATTERN) MAP OF WATERSHED SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1964, MISC. PUB.1194, P. 13.11-6.

1967 MEAN DAILY DISCHARGE (cfs)						BLACKSBURG, VIRGINIA						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.80	.34	.50	.34	.23	.22	.14	.08	.10	.07	.09	.13
2	.78	.34	.48	.34	.23	.20	.13	.07	.10	.06	.13	.13
3	.61	.31	.46	.34	.21	.18	.14	.07	.10	.08	.10	.73
4	.60	.32	.43	.34	.19	.17	.25	.17	.10	.08	.09	.23
5	.82	.31	.45	.32	.20	.15	.14	.12	.10	.09	.09	.18
6	.68	.34	.43	.31	.19	.14	.12	.11	.09	.07	.09	.16
7	.55	.45	.51	.28	3.35	.14	.20	.09	.08	.10	.09	.15
8	.53	.38	.44	.28	1.12	.14	.19	.09	.08	.10	.09	.00
9	.51	.31	.39	.28	.60	.12	.14	.08	.11	.10	.09	.00
10	.46	.40	.38	.30	.40	.13	.14	.09	.13	.13	.09	1.11
11	.56	.57	.38	.29	.35	.13	.14	.09	.09	.09	.09	.78
12	.48	.71	.38	.28	.30	.12	.12	.09	.09	.08	.10	1.21
13	.40	.55	.38	.29	.29	.10	.14	.08	.08	.08	.10	.46
14	1.50	.52	.38	.28	.29	.11	.23	.06	.08	.08	.10	.33
15	.97	.50	.41	.28	.27	.11	.18	.06	.08	.06	.10	.28
16	.64	.44	.33	.26	.23	.10	.14	.06	.09	.07	.09	.25
17	.52	1.71	.32	.30	.20	.11	.13	.06	.09	.07	.10	.23
18	.44	3.08	.31	.26	.21	.56	.13	.05	.07	.09	.11	.27
19	.44	1.19	.31	.23	.20	.51	.14	.05	.08	.07	.09	.29
20	.44	3.42	.32	.23	.19	.18	.13	.08	.10	.06	.10	.28
21	.49	3.10	.94	.22	.27	.14	.12	.18	.12	.06	.11	.26
22	.55	1.28	.56	.26	.39	.18	.10	.16	.13	.06	.11	.37
23	.49	.96	.48	.22	.34	.27	.10	.26	.07	.06	.14	.74
24	.43	.73	.42	.21	.26	.14	.09	.97	.05	.07	.14	.41
25	.42	.61	.40	.19	.23	.46	.10	.23	.05	.13	.15	.34
26	.41	.53	.38	.47	.19	.51	.10	.14	.06	.14	.11	.31
27	.44	.55	.38	.36	.19	.20	.08	.42	.08	.08	.10	.28
28	.40	.62	.38	.26	.17	.15	.09	.25	.24	.07	.09	.94
29	.35	-----	.37	.25	.19	.15	.09	.16	.14	.07	.09	.87
30	.34	-----	.34	.25	.18	.16	.11	.14	.08	.08	.17	.46
31	.34	-----	.34	-----	.30	-----	.09	.13	-----	.08	-----	.40
MEAN	.56	.88	.42	.28	.39	.20	.13	.15	.10	.08	.11	.41
INCHES	.74	1.05	.56	.36	.51	.26	.18	.20	.12	.11	.14	.54

NOTES: TO CONVERT CFS TO IN/DAY, MULTIPLY BY 0.042886.

1967 SELECTED RUNOFF EVENT			BLACKSBURG, VIRGINIA				ROCKY RUN BRANCH W-I				13.11		
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF						
DATE MO-DAY	RAINFALL inches	RUNOFF inches	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)			
Event of August 27 and 28, 1967													
8-27	RG R-1	2/.0040	8-27	RG	R-2	.00	8-27	1435	.1679	.0000			
	1/.05			1432	.00			1440	.5486	.0001			
8-27	RG R-2	.00		1436	.30	.02		1445	1.2932	.0002			
	1438			3.90	.15	1450		1.2876	.0004				
				1442	4.05	.42		1455	.8005	.0005			
				1446	1.20	.50							
				1453	.09	.51		1500	.6662	.0006			
				1606	.01	.52		1505	.7222	.0007			
				1630	.15	.58		1510	1.3380	.0009			
				1720	.07	.64		1515	3.7340	.0013			
				1800	.03	.66		1520	5.0719	.0019			
				1900	.03	.69		1525	4.2770	.0026			
				RG	R-1	.75		1530	3.4877	.0032			
				2 RG	AVG 3/	.71		1535	2.9838	.0037			
								1540	2.3960	.0041			
								1550	1.7690	.0047			
								1615	.9517	.0057			
								1640	.6886	.0063			
								1700	.7725	.0068			
								1715	.8957	.0071			
								1755	.7446	.0081			
								1915	.6438	.0098			
								2015	.5430	.0108			
								2150	.4535	.0122			
								2345	.3751	.0137			
								2400	.3751	.0138			
							8-28	0230	4/.3079	.0154			
								1220	.2463	.0202			
								2230	.1903	.0242			
Watershed conditions													
Woods, mixture of hardwood and conifers, good cover, 57%; idle, good cover of weeds, grasses & vines, 10%; pasture, mostly native grasses, good cover, 2 to 4 in. high, 13%; corn, 5 1/2 to 6 1/2 ft. high, fair cover, 4%; hay, mostly alfalfa mixed with grasses 4 to 12 in. high, good cover, 9%; tobacco, fair stand, 3 1/2 to 4 ft. high, fair cover, 1%; other cultivated, 4%; paved road, 2%.													

NOTES: TO CONVERT CFS TO IN/HR, MULTIPLY BY 0.0017869. FOR 30-DAY ANTECEDENT P AND Q, SEE DAILY TABLES ON THIS AND PREVIOUS PAGE. 1/.05 IN. FROM 0010 TO 0100. 2/ CONTINUOUS FLOW PRIOR TO 1435. 3/ THIESSEN WEIGHTED FOR RG R-1 AND R-2. 4/ RUNOFF SLOWLY RECEDING TO NORMAL BASE FLOW.

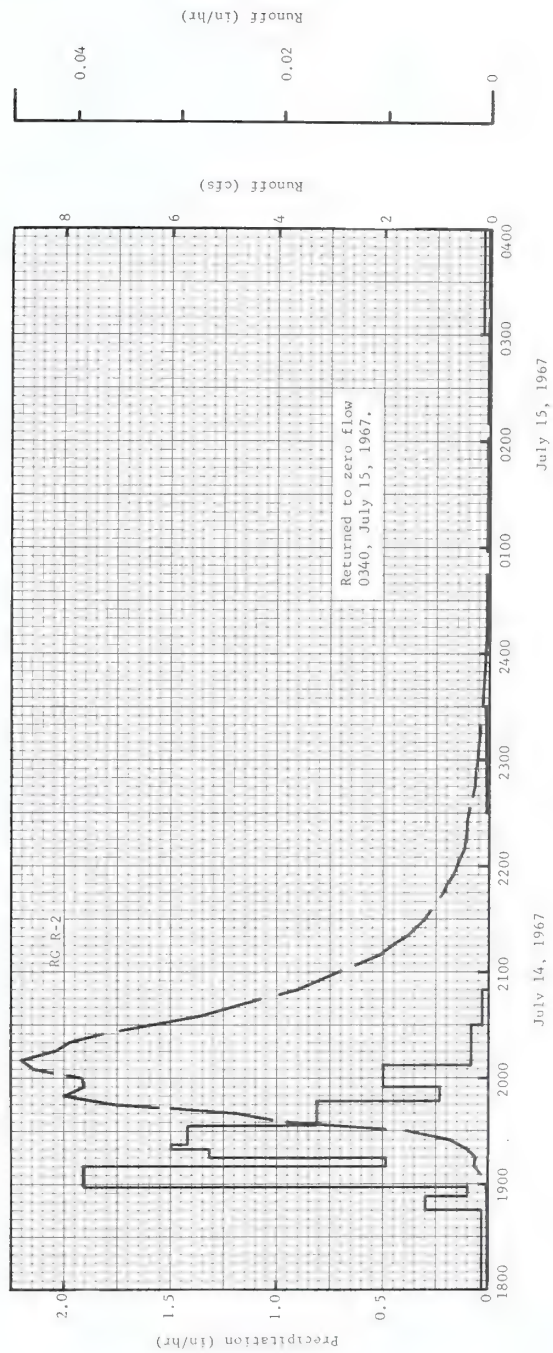


BLACKSBURG, VIRGINIA ROCKY RUN BRANCH W-1

MONTHLY PRECIPITATION AND RUNOFF (inches)						BLACKSBURG, VIRGINIA PONY MOUNTAIN BRANCH W-I 13.12 AREA—192 ACRES										
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	Q	1.21 .92	1.80 .37	5.37 2.45	.65 .02	3.92 .08	1.78 .08	3.12 .07	7.09 .33	.78 .00	3.30 .04	1.76 T	6.22 2.26	37.00 6.62		
STA AVG P (58-67)	P	2.68	3.35	3.52	2.87	3.08	3.00	3.04	3.46	3.71	2.48	2.47	2.57	36.23		
MEAN P	P	1.10	1.63	1.77	.92	.35	.32	.08	.14	.35	.22	.14	.49	7.51		
61 YR	P	3.03	2.59	3.19	3.45	3.85	3.99	4.11	4.32	3.55	2.88	2.75	2.89	40.60		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	3-7	.19	3-7	.17	3-7	.31	3-7	.74	3-6	1.01	3-6	1.18	3-6	1.27	3-6	1.59
MAXIMUMS FOR PERIOD OF RECORD																
1958 TO 1967	6-24 1958	.48	5-19 1966	.29	2-7 1965	.44	2-7 1965	.89	2-7 1965	1.23	2-7 1965	1.45	2-7 1965	1.61	2-18 1961	2.76
NOTES: Watershed conditions: Mixed cover, farm woods, predominantly hardwood, 53%; permanent pasture with a fair cover of native grass mixture, 29%; corn, 15%; hay crop, 1%; total cultivated, 16%; paved roads, 2%. 1/ Precipitation Thiessen weighted from R-1 and R-2. 2/ Determined from continuous records from May, 1958 through 1967, precipitation Thiessen weighted. 3/ Mean P based on 61-yr (1907-67) U.S. Weather Bureau record period at Culpeper, Virginia. Monthly records missing for Jan. through July 1907, Nov. 1949, Dec. 1950, and for Jan. through Apr. and July 1951.																
1967 DAILY PRECIPITATION (inches)						BLACKSBURG, VIRGINIA PONY MOUNTAIN BRANCH W-I 13.12										
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC				
1	.00	.00	.00	.00	.00	.00	.00	.49	.00	.00	.00	.04				
2	.00	.12	.00	.00	.28	.00	.38	.00	.00	.00	.40	.16				
3	.00	.00	.00	.04	.13	.00	.00	.41	.00	.00	.00	1.11				
4	.00	.00	.08	.00	.00	.00	.07	.00	.00	.00	.00	.00				
5	.00	.00	.00	.02	.00	.00	.00	.60	.00	.00	.00	.00				
6	.00	.175	1.28	.04	.38	.00	.00	.00	.00	.16	.00	.00				
7	.00	.505	1.49	.03	.97	.00	.00	.08	.00	.10	.00	.01				
8	.10	.00	.00	.02	.11	.00	.41	.00	.00	.11	.00	.00				
9	.00	.115	.00	.00	.00	.00	.00	.00	.10	.00	.00	.08				
10	.00	.00	.00	.00	.00	.00	.00	.14	.00	.78	.00	1.74				
11	.00	.00	.38	.00	.08	.00	.09	.00	.00	.00	.00	.40				
12	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00	.15				
13	.00	.00	.07	.05	.05	.00	.00	.00	.00	.00	.00	.00				
14	.14	.00	.61	.00	.54	.01	1.66	.00	.00	.00	.00	.00				
15	.00	.00	.53	.00	.00	.00	.02	.00	.00	.00	.00	.00				
16	.00	.00	.00	.00	.00	.00	.00	.00	.04	.00	.00	.00				
17	.00	.65M	.00	.04	.00	.00	.13	.00	.00	.00	.10	.00				
18	.00	.135	.00	.00	.00	.00	.16	.00	.00	1.49	.00	.10				
19	.105	.00	.00	.00	.27	.00	.00	.02	.00	.00	.00	.00				
20	.00	.07	.16	.00	.00	.00	.15	.19	.00	.00	.00	.00				
21	.00	.05	.58	.00	.25	.00	.00	.03	.05	.00	.05	.00				
22	.00	.00	.00	.04	.13	1.28	.00	.13	.00	.00	.01	.83				
23	.00	.00	.00	.00	.00	.21	.00	1.65	.00	.00	.10	.00				
24	.00	.00	.00	.00	.00	.00	.00	2.93	.00	.00	.12	.00				
25	.00	.00	.00	.00	.00	.11	.00	.01	.00	.66	.00	.00				
26	.00	.00	.00	.35	.00	.00	.00	.10	.00	.00	.00	.00				
27	.87	.00	.00	.02	.00	.00	.00	.30	.07	.00	.00	.00				
28	.00	.00	.19	.00	.00	.00	.00	.00	.52	.00	.00	1.445				
29	.00		.00	.00	.63	.02	.05	.01	.00	.00	.00	.00				
30	.00		.00	.00	.00	.14	.00	.00	.00	.00	.985	.00				
31	.00		.00		.10		.00	.00	.00	.00		.165				
TOTAL	1.21	1.80	5.37	.65	3.92	1.78	3.12	7.09	.78	3.30	1.76	6.22				
STA AV	2.68	3.35	3.52	2.87	3.08	3.00	3.04	3.46	3.71	2.48	2.47	2.57				
NOTES: PRECIPITATION AMOUNTS ARE THIESSEN WEIGHTED VALUES FROM GAGES R-1 AND R-2. STA AV IS FOR PERIOD MAY, 1958 THROUGH 1967. FOR DRAINAGE PATTERN MAP OF WATERSHED SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, MISC. PUB. 994, P. 13.12-7.																

1967 MEAN DAILY DISCHARGE (cfs)						BLACKSBURG, VIRGINIA PONY MOUNTAIN BRANCH W-I 13.12						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.21	.04	.01	.02	T	.00	.00	.00	.00	.00	.00	.00
2	.26	.04	.01	.02	T	.00	.00	.00	.00	.00	T	.00
3	.34	.03	.01	.01	T	.00	.00	.00	.00	.00	.00	1.26
4	.35	.02	.01	.01	.00	.00	.00	.00	.00	.00	.00	.18
5	.32	.02	.02	.01	.00	.00	.00	.15	.00	.00	.00	.12
6	.18	.01	.78	.02	.01	.00	.00	.00	.00	.00	.00	.09
7	.48	.04	8.95	.02	.32	.00	.00	.00	.00	.00	.00	.12
8	1.47	.16	.60	T	.06	.00	.00	.00	.00	.00	.00	.12
9	.74	.01	.37	.01	.02	.00	.00	.00	.00	.00	.00	.06
10	.42	.01	.24	T	T	.00	.00	.00	.00	.02	.00	3.99
11	.22	.04	.45	T	.01	.00	.00	.00	.00	.00	.00	2.45
12	.14	.03	.31	T	T	.00	.00	.00	.00	.00	.00	1.40
13	.13	.02	.22	T	T	.00	.00	.00	.00	.00	.00	.38
14	.20	.24	1.08	T	.09	.00	.53	.00	.00	.00	.00	.20
15	.12	.53	2.69	T	.04	.00	T	.00	.00	.00	.00	.13
16	.07	.22	.77	T	.01	.00	.00	.00	.00	.00	.00	.09
17	.07	.12	.35	T	T	.00	.00	.00	.00	.00	.00	.06
18	.04	.12	.19	T	T	.00	.00	.00	.00	.24	.00	.07
19	.02	.11	.15	T	.01	.00	.00	.00	.00	.00	.00	.05
20	.05	.28	.15	T	T	.00	.00	.00	.00	.00	.00	.03
21	.05	.43	.98	T	T	.00	.00	.00	.00	.00	.00	.04
22	.05	.17	.43	T	.01	.53	.00	.00	.00	.00	.00	1.23
23	.03	.11	.28	T	T	.09	.00	.38	.00	.00	.00	.49
24	.02	.05	.16	T	.00	.00	.00	1.60	.00	.00	.00	.25
25	.02	.03	.13	T	.00	.00	.00	.42	.00	.03	.00	.22
26	.02	.03	.09	T	.00	.00	.00	.03	.00	T	.00	.14
27	.98	.01	.07	T	.00	.00	.00	.11	.00	.00	.00	.11
28	.25	.02	.08	T	.00	.00	.00	.01	.00	.00	.00	2.27
29	.11	-----	.09	T	.09	.00	.00	T	.00	.00	.00	1.72
30	.07	-----	.04	T	T	.00	.00	.00	.00	.00	.00	.60
31	.06	-----	.03	-----	T	-----	.00	.00	-----	.00	-----	.39
MEAN	.24	.11	.64	T	.02	.02	.02	.09	.00	.01	T	.59
INCHES	.92	.37	2.45	.02	.08	.08	.07	.33	.00	.04	T	2.26
NOTES: TO CONVERT CFS TO IN/DAY, MULTIPLY BY 0.123967.												
1967 SELECTED RUNOFF EVENT						BLACKSBURG, VIRGINIA PONY MOUNTAIN BRANCH W-I 13.12						
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF					
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)		
Event of July 14 and 15, 1967												
7-14	RG R-1 1/ .43	2/ .0073	7-14	RG	R-2	.00	7-14	1810	.0058	.0000		
				1845	.03	.02		1815	.0116	.0000		
	RG R-2			1853	.30	.06		1830	.0077	T		
				1859	.10	.07		1845	.0077	T		
7-14	3/ .58			1910	1.91	.42		1850	.0097	T		
				1915	.48	.46		1855	.0097	T		
				1920	1.32	.57		1900	.0503	T		
				1922	1.50	.62		1905	.1470	.0001		
				1933	1.42	.88		1910	.2862	.0002		
				1947	.81	1.07		1915	.2437	.0003		
Watershed Conditions					1955	.23	1.10	1920	.4119	.0004		
Woods, mostly hardwood, good cover, 53%; pasture, native grasses, 2 to 4 in. high, good cover, 29%; corn, 6 to 7 ft. high, fair cover, 15%; hay, clovers and grasses, 6 to 8 in. high, good cover, 1%; paved roads, 2%.					2007	.50	1.20	1925	.7252	.0007		
				2030	.08	1.23		1930	1.5819	.0012		
				2050	.03	1.24		1935	3.8058	.0023		
				2230	.00	1.24		1940	4.7360	.0042		
			7-15	2330	.01	1.25		1945	7.0082	.0067		
				0300	.00	1.25		1950	7.9810	.0099		
				0400	.03	1.28		1955	7.6329	.0133		
				RG	R-1	1.19		2000	7.6851	.0166		
				2 RG	AVG 4/	1.22		2005	8.5843	.0201		
								2010	8.8087	.0238		
								2015	8.1937	.0275		
								2020	7.9017	.0310		
								2025	7.2751	.0342		
								2035	5.4322	.0397		
								2045	4.2970	.0439		
								2050	3.6298	.0456		
								2110	2.0460	.0505		
								2115	1.8333	.0513		
								2120	1.5393	.0521		
NOTES: TO CONVERT CFS TO IN/HR, MULTIPLY BY 0.0051653. FOR 30-DAY ANTECEDENT P & Q, SEE DAILY TABLES ON THIS AND PREVIOUS PAGE. 1/ .43 IN. FROM 1300 TO 1400. 2/ CONTINUOUS FLOW PRIOR TO 1810. 3/ .58 IN. FROM 1440 TO 1540. 4/ THIESSEN WEIGHTED FOR RG R-1 AND R-2.												

1967			SELECTED RUNOFF EVENT				BLACKSBURG, VIRGINIA		PONY MOUNTAIN BRANCH W-I		13.12	
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF					
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)		
Event of July 14-15, 1967 - Continued												
							7-14	2130	1.2125	.0533		
								2135	1.1352	.0538		
								2145	.8548	.0546		
								2150	.7929	.0550		
								2155	.6768	.0553		
								2205	.5705	.0559		
								2210	.4777	.0561		
								2220	.4080	.0565		
								2225	.4080	.0566		
								2245	.2669	.0572		
								2250	.2669	.0573		
								2300	.2089	.0575		
								2305	.2089	.0576		
								2315	.1605	.0578		
								2320	.1605	.0579		
								2330	.1199	.0580		
								2335	.1218	.0580		
								2350	.0870	.0582		
							7-15	2400	.0870	.0582		
								0015	.0580	.0583		
								0045	.0387	.0585		
								0125	.0232	.0586		
								0220	.0116	.0586		
								0340	1/ .0058	.0587		
								0640	.0039	.0588		
NOTES: TO CONVERT CFS TO IN/HR, MULTIPLY BY 0.0051653. 1/ ZERO FLOW.												



BLACKSBURG, VIRGINIA PONY MOUNTAIN BRANCH W-1

MONTHLY PRECIPITATION AND RUNOFF (inches)						BLACKSBURG, VIRGINIA CHUB RUN W-I 13.13 AREA—2023 ACRES (3.16 SQ. MILES)										
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	P 1/	1.38	1.46	4.94	.93	3.66	1.18	1.96	6.71	2.97	3.88	1.22	4.67	34.96		
	O	.95	.97	1.95	.61	.49	.15	.07	.18	.14	.46	.30	.94	7.21		
STA AV 2/	P	2.47	3.45	3.53	2.79	3.09	3.06	2.62	2.91	3.33	2.39	2.88	2.45	34.97		
	O (59-67)	.94	1.13	1.79	1.17	.74	.48	.19	.11	.11	.28	.43	.55	7.92		
MEAN P 3/	27 YR	2.57	2.33	3.31	2.84	3.62	3.36	3.90	4.36	3.47	3.33	2.77	2.64	38.50		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	3-7	.05	3-7	.05	3-7	.10	3-7	.22	3-7	.30	3-7	.39	3-6	.49	3-6	.85
MAXIMUMS FOR PERIOD OF RECORD																
1959 TO 1967	9-30 1959	.24	9-30 1959	.17	9-30 1959	.24	9-30 1959	.34	9-30 1959	.40	6-20 1962	.52	6-19 1962	.90	3-29 1960	1.58
NOTES: Watershed conditions: Mixed cover; farm woods, predominantly hardwoods mixed with conifers, 57%; permanent pasture, a fair cover of native grasses, 29%; corn, 2%; alfalfa and other hay crops, 7%; total cultivated, 9%; idle, 4%; roads, 1%. 1/ Precipitation Thiessen weighted from R-1, R-2 and R-3. 2/ Determined from continuous records from September, 1959 through 1967, precipitation Thiessen weighted. 3/ Mean P based on 27-yr (1941-67) U.S. Weather Bureau record period at Luray (5 miles E), Virginia. Missing monthly totals for Jan. and Feb., 1941 were estimated from nearby Weather Bureau records at Riverton, Va.																
1967 DAILY PRECIPITATION (inches)						BLACKSBURG, VIRGINIA CHUB RUN W-I 13.13										
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC				
1	.00	.00	.00	.00	.03	.00	.00	.00	.00	.00	.00	.05				
2	.00	.18	.00	.00	.60	.00	.27	.00	.00	.00	.11	.13				
3	.00	.00	.00	.01	.00	.00	.00	.36	.00	.00	.00	.94				
4	.00	.00	.14	.00	.00	.00	.09	.36	.00	.00	.00	.00				
5	.00	T	.00	.05	.00	.00	.00	.00	.00	.00	.00	.00				
6	.00	.10S	1.08	.33	.45	.00	.01	.00	.00	.25	.00	.00				
7	.00	.46S	1.36	.08	.75	.00	.04	.28	.00	.18	.00	.00				
8	.07	.00	.00	.00	.02	.00	.09	.00	.00	.00	.00	.00				
9	.00	.07S	.00	.00	.03	.00	.01	.05	.10	.00	.00	.00				
10	.00	.01S	.00	.00	.00	.00	.00	.08	.00	.76	.00	1.32				
11	.00	.00	.07	.00	.10	.00	.47	.00	.00	.00	.00	.13				
12	.00	.00	.00	.00	.00	.00	T	.00	.00	.00	.00	.01				
13	.00	.00	.09	.06	.07	.00	.00	.00	.00	.00	.00	.00				
14	.10	.00	.92	.00	.46	.00	.20	.00	.00	T	.00	.00				
15	.00	.00	.46	.00	.03	.00	.31	.00	.00	.00	.03	.00				
16	.00	.00	.00	.00	.00	.00	.00	.00	.07	.00	.00	.00				
17	.00	.51M	.00	.14	.07	.00	.11	.00	.02	.00	.14	.00				
18	.00	.05M	.00	.00	.00	.00	T	.00	.00	1.65	.00	.15				
19	.16S	.00	.00	.00	.16	.00	.00	.87	.00	.00	.00	.00				
20	.00	.08	.16M	.00	.00	.00	.18	.26	.00	.00	.00	.00				
21	.00	.00	.66	.02	.23	.00	.00	.02	.40	.00	.10	.00				
22	.00	.00	.00	.01	.03	.90	.00	.00	.07	.00	.02	.28				
23	.00	.00	.00	.00	.00	.00	.00	1.36	.00	.00	.07	.00				
24	.00	.00	.00	.02	.00	.00	.00	2.22	.00	.00	.05	.00				
25	.00	.00	.00	.00	.00	.05	.00	.10	.00	1.04	.00	.00				
26	.00	.00	.00	.12	.00	.00	.00	.16	.00	.00	.00	.00				
27	1.05	.00	.00	.09	.00	.00	.00	.59	.00	.00	.00	.00				
28	.00	.00	.00	.00	.00	.00	.09	.00	2.31	.00	.00	1.35S				
29	.00	-----	.00	.00	.45	.04	.09	.00	.00	.00	.00	.19S				
30	.00	---	.00	.00	.00	.19	.00	.00	.00	.00	.70N	.00				
31	.00	-----	.00	.00	.18	-----	.00	.00	.00	.00	---	.12S				
TOTAL	1.38	1.46	4.94	.93	3.66	1.18	1.96	6.71	2.97	3.88	1.22	4.67				
STA AV	2.47	3.45	3.53	2.79	3.09	3.06	2.62	2.91	3.33	2.39	2.88	2.45				
NOTES: PRECIPITATION AMOUNTS ARE THIESSEN WEIGHTED VALUES FROM GAGES R-1, R-2 & R-3. STA AV IS FOR PERIOD SEPTEMBER 1959 THROUGH 1967. FOR DRAINAGE PATTERN MAP OF WATERSHED SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, MISC. PUB. 994, P. 13.13-5.																

1967 MEAN DAILY DISCHARGE (cfs)						BLACKSBURG, VIRGINIA CHUB RUN W-I 13.13						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	2.65	2.67	2.14	2.75	1.09	.88	.17	.10	.48	.53	1.38	.74
2	3.09	2.74	2.55	2.52	1.27	.82	.60	.07	.45	.44	1.35	.77
3	2.85	2.56	1.83	2.37	1.38	.71	.22	.12	.40	.41	1.22	4.29
4	2.50	2.33	1.91	2.31	1.11	.42	.22	.17	.37	.39	1.06	2.60
5	2.78	2.17	1.79	2.31	1.05	.63	.17	.18	.35	.38	.95	2.12
6	3.20	2.03	2.93	2.57	1.32	.58	.20	.13	.32	.45	.94	1.96
7	3.21	2.19	32.66	2.54	2.72	.49	.18	.24	.30	.53	.91	1.83
8	3.28	3.91	8.56	2.13	1.91	.50	.24	.17	.28	.49	.85	1.68
9	3.15	3.58	5.94	2.02	1.73	.50	.21	.11	.29	.42	.89	1.63
10	3.03	2.08	5.10	1.95	1.56	.49	.17	.07	.33	1.29	.84	5.88
11	2.89	2.58	4.65	1.73	1.66	.45	.28	.08	.30	.83	.84	7.93
12	2.78	2.35	4.30	1.76	1.50	.41	.16	.08	.25	.72	.84	5.07
13	2.63	2.34	3.82	1.82	1.50	.39	.18	.07	.22	.61	.84	3.97
14	2.69	2.66	6.69	1.74	1.97	.37	.20	.20	.21	.58	.80	3.37
15	2.41	2.87	11.54	1.66	1.70	.36	.36	.23	.21	.55	.76	2.90
16	2.13	2.64	6.49	1.56	1.43	.32	.19	.18	.23	.53	.66	2.55
17	1.96	2.70	5.53	1.64	1.46	.31	.20	.07	.26	.53	.81	2.36
18	1.85	2.63	4.73	1.56	1.38	.31	.20	.06	.22	4.09	.80	2.51
19	2.06	2.75	4.39	1.42	1.41	.34	.18	.31	.20	2.81	.72	2.20
20	2.46	3.22	4.21	1.40	1.06	.31	.20	.31	.21	1.97	.74	1.95
21	1.84	3.24	6.76	1.40	1.46	.29	.20	.18	.36	1.58	.75	1.89
22	1.74	2.91	5.40	1.35	1.44	.68	.17	.14	.28	1.34	.84	2.28
23	1.65	2.72	4.68	1.29	1.18	.46	.14	1.03	.23	1.24	.82	1.84
24	1.56	2.57	4.14	1.23	1.11	.36	.12	3.65	.22	1.10	.73	1.74
25	1.50	5.38	3.77	1.19	.95	.30	.13	1.90	.22	3.30	.74	1.73
26	1.50	7.42	3.67	1.27	.88	.27	.10	.86	.18	2.95	.69	1.63
27	4.24	3.17	3.43	1.29	.84	.24	.11	1.65	.19	2.35	.67	1.54
28	3.98	2.02	3.32	1.15	.79	.19	.17	1.19	2.12	2.01	.61	.00
29	3.23	-----	3.16	1.04	1.11	.19	.20	.81	1.23	1.79	.73	5.53
30	2.93	-----	2.91	1.07	.88	.24	.18	.60	.71	1.65	.91	2.04
31	2.78	-----	2.74	-----	.99	-----	.15	.53	-----	1.50	-----	1.47
MEAN	2.60	2.94	5.35	1.73	1.35	.43	.20	.50	.39	1.27	.86	2.58
INCHES	.95	.97	1.95	.61	.49	.15	.07	.18	.14	.46	.30	.94

NOTES: TO CONVERT CFS TO IN/DAY, MULTIPLY BY 0.011766.

1967			SELECTED RUNOFF EVENT				BLACKSBURG, VIRGINIA				CHUB RUN W-I				13.13	
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)						
Event of March 6-9, 1967																
3 -6	RG R-1 1/ .20	2/.0119	3 -6	RG 1150	R-2 .00	.00	3 -6	1150	2.3050	.0000						
				1230	.03	.02		1735	2.4886	.0068						
	RG R-2			1310	.03	.04		1825	2.8150	.0078						
3 -6	3/ .19			1350	.00	.04		1910	3.0190	.0089						
				1500	.02	.06		1925	3.3250	.0093						
	RG R-3			1610	.01	.07		1955	3.7329	.0102						
				1700	.04	.10		2005	3.7533	.0105						
3 -6	4/ .17			1730	.04	.12		2015	3.9981	.0108						
				1810	.06	.16		2025	4.1409	.0111						
				1850	.06	.20		2030	4.4469	.0113						
Watershed conditions:				1904	.13	.23		2035	4.4469	.0115						
				1912	.22	.26		2050	5.1404	.0121						
Woods, mixture of dormant				1917	.12	.27		2115	5.3240	.0131						
hardwood and conifers, good				1930	.14	.30		2125	5.6912	.0136						
cover of forest litter, 57%;				1940	.06	.31		2140	6.2011	.0143						
pasture, 2 to 4 in. good cover,																
29%; hay, mostly alfalfa and				2028	.13	.41		2235	6.7111	.0172						
grasses beginning to grow, 1				2040	.35	.48		2245	6.7519	.0178						
to 2 in. high, fair cover, 7%;				2120	.08	.53		2300	7.3843	.0186						
fallow land, poor cover, 2%;				2140	.21	.60		2330	7.7310	.0205						
idle, very good cover of weeds				2230	.10	.68		2335	8.0166	.0208						
and grass, 4%; paved roads, 1%.																
				2250	.21	.75		2340	7.9350	.0211						
				2330	.13	.84		2350	8.6286	.0218						
				2400	.14	.91		2400	8.7102	.0225						
			3 -7	0034	.19	1.02	3 -7	0005	9.0569	.0229						
				0042	.45	1.08		0010	9.0569	.0233						

NOTES: TO CONVERT CFS TO IN/HR, MULTIPLY BY 0.0004902. FOR 30-DAY ANTECEDENT P & Q, SEE DAILY TABLES ON THIS AND PREVIOUS PAGE. 1/ .19 IN. FROM 0700 TO 0800; .01 IN. FROM 0900 TO 1000. 2/ CONTINUOUS FLOW PRIOR TO 1150. 3/ .19 IN. FROM 0724 TO 0810. 4/ .17 IN. FROM 0720 TO 0830.

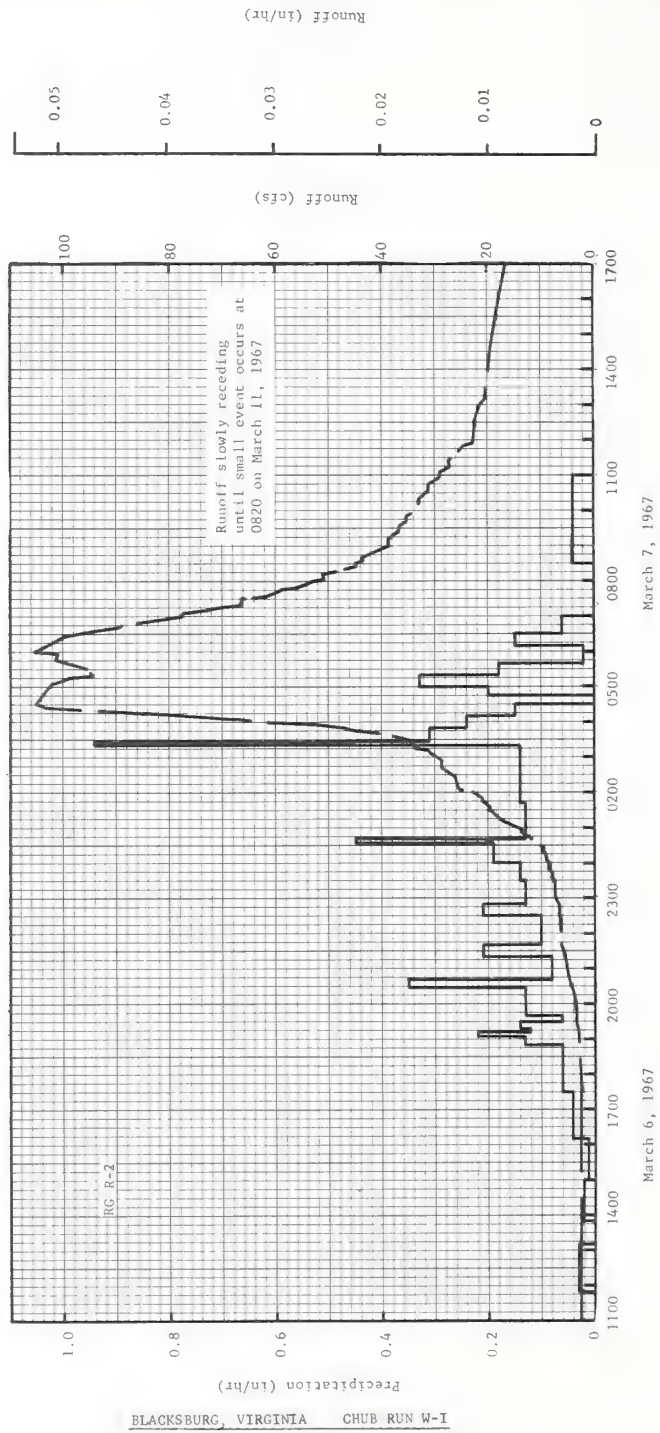
1967 SELECTED RUNOFF EVENT			BLACKSBURG, VIRGINIA CHUB RUN W-I 13.13							
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (cfs)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)
Event of March 6-9, 1967 - Continued										
3 -7			3 -7	RG	R-2	1.21	3 -7	0020	9.9341	.0240
				0142	.13			0025	9.9749	.0245
				0254	.14			0045	12.3003	.0263
				0320	.14			0050	13.3202	.0268
				0327	.94			0055	13.8506	.0273
				0350	.31			0110	17.3387	.0293
				0410	.24			0130	19.6642	.0323
				0430	.15			0135	19.6642	.0331
				0445	.00			0145	20.9697	.0347
				0500	.20			0150	20.9697	.0356
				0520	.33			0200	22.7851	.0374
				0540	.18			0205	25.7225	.0384
				0610	.02			0225	26.0081	.0426
				0630	.15			0240	28.6191	.0468
				0700	.06			0255	28.6191	.0495
				0830	.00			0305	30.4754	.0519
				1100	.04			0310	31.1077	.0531
				RG	R-3			0315	33.6167	.0545
			3 -6	1210	.00	.00		0325	34.1675	.0572
				1230	.06	.02		0330	34.8202	.0586
				1430	.02	.06		0340	40.4502	.0617
				1600	.01	.08		0345	45.1419	.0635
				1640	.03	.10		0350	47.2021	.0653
				1720	.06	.14		0355	52.5465	.0674
				1800	.04	.17		0400	61.7055	.0697
				1850	.06	.22		0405	67.4987	.0724
				1900	.18	.25		0415	84.7354	.0786
				1906	.30	.28		0425	103.1348	.0862
				1930	.08	.31		0430	104.7055	.0905
				1950	.09	.34		0505	102.0945	.1201
				2030	.13	.43		0510	99.9323	.1242
				2048	.17	.48		0515	98.7696	.1283
				2124	.08	.53		0520	94.1799	.1322
				2135	.22	.57		0530	95.6486	.1399
				2210	.09	.62		0545	101.6458	.1520
				2220	.06	.63		0555	100.8094	.1603
				2225	.24	.65		0600	105.1543	.1645
				2240	.16	.69		0625	99.6875	.1854
				2320	.18	.81		0635	93.6087	.1933
				2400	.13	.90		0640	89.5902	.1971
3 -7			3 -7	0030	.20	1.00		0645	88.7947	.2007
				0040	.48	1.08		0700	77.4939	.2109
				0051	.11	1.10		0705	77.4735	.2141
				0125	.16	1.19		0710	72.5983	.2171
				0145	.18	1.25		0715	70.5584	.2201
				0210	.14	1.31		0720	66.5195	.2229
				0300	.13	1.42		0730	66.1320	.2283
				0317	.21	1.48		0735	61.8075	.2309
				0335	.87	1.74		0745	58.8701	.2358
				0400	.22	1.83		0750	55.9531	.2382
				0430	.18	1.92		0800	53.0361	.2426
				0450	.12	1.96		0805	50.6087	.2447
				0530	.29	2.15		0810	51.0983	.2468
				0610	.06	2.19		0820	47.1613	.2508
				0630	.18	2.25		0825	44.7543	.2527
				0740	.02	2.27		0830	45.2643	.2546
				0750	.12	2.29		0835	43.8160	.2564
				0850	.01	2.30		0840	43.8160	.2582
				0900	.12	2.32		0900	38.5328	.2649
				0930	.02	2.33		0910	38.7164	.2681
				RG	R-1	2.14		0925	36.8397	.2727
				3 RG	AVG 1/	2.26		0935	36.6357	.2757
								0940	35.6974	.2772
								0950	35.6974	.2801
								0955	34.3511	.2815

Continued on next page

NOTES: TO CONVERT CFS TO IN/HR, MULTIPLY BY 0.0004902. 1/ THIESSEN WEIGHTED FOR RG R-1, R-2 AND R-3.

1967			SELECTED RUNOFF EVENT				BLACKSBURG, VIRGINIA				CHUB RUN W-I		13.13	
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF							
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)				
Event of March 6-9, 1967 - Continued														
							3 -7	1010	33.1068	.2856				
								1020	33.1068	.2883				
								1035	31.2505	.2923				
								1045	31.0057	.2948				
								1055	29.1495	.2973				
								1105	29.1291	.2997				
								1115	27.2728	.3020				
								1125	27.4972	.3042				
								1140	25.6409	.3075				
								1150	24.6618	.3095				
								1155	22.5811	.3105				
								1235	22.2344	.3178				
								1255	21.9080	.3214				
								1310	20.2149	.3240				
								1435	19.5010	.3378				
								1535	18.1955	.3470				
								1645	16.9104	.3571				
								1800	15.6049	.3670				
								1935	14.4421	.3787				
								2110	13.4018	.3895				
								2225	12.3819	.3974				
								2400	11.8515	.4068				
							3 -8	0105	10.8316	.4128				
								0300	10.3012	.4228				
								0410	9.3221	.4284				
								0535	9.3425	.4349				
								0630	8.9753	.4390				
								0805	8.9753	.4459				
								1035	8.6286	.4567				
								1330	8.6286	.4691				
								1415	8.6286	.4723				
								1655	7.3027	.4827				
								2050	7.0171	.4964				
								2135	7.3231	.4991				
								2400	6.9967	.5076				
							3 -9	0325	6.3847	.5188				
								0715	6.1196	.5305				
								0900	6.1196	.5358				
								1145	5.8544	.5438				
								1225	5.8748	.5458				
								1305	6.1400	.5477				
								1545	5.5688	.5554				
								2110	5.3240	.5699				
								2150	5.5892	.5716				
								2400	5.3036	.5774				

NOTES: TO CONVERT CFS TO IN/HR, MULTIPLY BY 0.0004902. 1/RUNOFF SLOWLY RECEDING UNTIL SMALL EVENT OCCURS 0820 ON 3-11-67.



MONTHLY PRECIPITATION AND RUNOFF (inches)						BLACKSBURG, VIRGINIA FOSTERS CREEK W-I 13.14 AREA—389 ACRES										
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967 P ₁	1.40	2.04	4.26	1.00	4.44	1.68	2.68	7.19	1.15	3.34	1.66	6.76	37.60			
O	.68	.55	1.41	.38	.64	.16	.17	.69	.14	.21	.18	2.26	7.47			
STA AVG ₂	2.62	3.67	3.69	2.37	2.97	2.72	2.61	3.32	3.31	3.23	2.51	3.22	36.24			
(60-67) O	1.06	1.84	1.96	.92	.66	.31	.20	.20	.21	1.06	.34	.83	9.59			
MEAN ₃	3.31	2.90	3.59	3.36	3.39	3.46	4.51	4.26	3.23	2.86	2.68	3.04	40.59			
52 YR																
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	12-11	.22	12-11	.18	12-11	.28	12-11	.42	12-11	.51	12-11	.59	12-10	.96	12-10	1.07
MAXIMUMS FOR PERIOD OF RECORD																
1950 TO	10-20	1.71	10-20	.76	10-20	1.02	10-20	2.06	10-20	3.02	10-20	4.96	10-20	5.89	10-20	5.96
1967	1961		1961		1961		1961		1961		1961		1961		1961	
Notes: Watershed conditions: Mixed cover; farm woods, predominantly hardwoods, 44%; permanent pasture, usually a good cover of native grass and clover mixture, 28%; corn, 5%; hay mixtures such as alfalfa, orchardgrass, lespedeza and other clovers, 19%; other cultivated areas, 1%; total cultivated, 25%; idle land, usually a good cover of tall weeds, brush and native grass, 17%; paved roads, 2%. 1/ Precipitation Thiessen weighted from R-1 and R-2. 2/ Determined from continuous records from September, 1960 through 1967, precipitation Thiessen weighted. 3/ Mean P based on 52-yr (1916-67) U.S. Weather Bureau record period at Louisa, Virginia. Records at Mineral, Va. utilized to 1940. During change over, months of Jan. and Feb. 1941 and Mar., Oct., Nov., and Dec. 1940, had missing records.																
1967 DAILY PRECIPITATION (inches)						BLACKSBURG, VIRGINIA FOSTERS CREEK W-I 13.14										
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC				
1	.00	.00	.00	.00	.02	.00	.00	.00	.00	.00	.00	.00	.00			
2	.00	.00	.00	.00	.00	.00	1.64	.00	.00	.00	.45	.15				
3	.00	.00	.00	.00	.00	.00	.00	.37	.00	.00	.00	1.07				
4	.11M	.00	.07	.00	.00	.00	.00	.21	.00	.00	.00	.00				
5	.00	.00	.00	.16	.00	.00	.00	1.00	.00	.00	.00	.00				
6	.00	.30E	.47	.00	.24	.00	.00	.00	.00	.30	.00	.00				
7	.00	.71E	.98	.00	1.26	.00	.07	.00	.00	.27	.00	.00				
8	.09	.00	.00	.00	.02	.00	.19	.00	.00	.01	.00	.00				
9	.01	.17	.00	.00	.05	.00	.00	.11	.17	.05	.00	.00				
10	.00	.00	.00	.00	.00	.00	.00	.26	.00	1.27	.00	1.49				
11	.00	.00	.18	.00	.08	.00	.00	.00	.00	.00	.00	1.07				
12	.00	.00	.13	.00	.00	.00	.00	.00	.00	.00	.00	.02				
13	.00	.00	.04	.05	.01	.00	.06	.00	.00	.00	.00	.00				
14	.19	.00	.75	.00	.93	.00	.35	.00	.00	.00	.00	.00				
15	.00	.00	.69	.00	.46	.00	.00	.00	.00	.00	.00	.00				
16	.00	.00	.00	.00	.00	.00	.00	.00	.04	.00	.00	.00				
17	.00	.63S	.00	.17	.03	.00	.00	.00	.00	.00	.01	.00				
18	.00	.08S	.00	.00	.00	.00	.24	.00	.00	.90	.00	.38				
19	.12S	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00				
20	.00	.15	.22	.00	.00	.00	.06	.09	.00	.00	.00	.00				
21	.00	.00	.59	.00	.22	.00	.00	.42	.23	.00	.00	.00				
22	.00	.00	.00	.00	.18	.35	.00	.81	.00	.00	.00	1.16				
23	.00	.00	.00	.00	.00	.57	.00	1.80	.00	.00	.10	.02				
24	.00	.00	.00	.02	.00	.00	.00	2.10	.00	.00	.48	.00				
25	.00	.00	.00	.00	.00	.55	.00	.02	.00	.54	.00	.00				
26	.00	.00	.00	.45	.00	.00	.00	.00	.00	.00	.00	.00				
27	.88	.00	.00	.15	.00	.00	.00	.00	.02	.00	.00	.00				
28	.00	.00	.13	.00	.06	.00	.00	.00	.69	.00	.00	1.22S				
29	.00	-----	.01	.00	.51	.00	.00	.00	.00	.00	.00	.00				
30	.00	-----	.00	.00	.00	.21	.07	.00	.00	.00	.62	.00				
31	.00	-----	.00	-----	.19	.00	.00	.00	-----	.00	-----	.18S				
TOTAL	1.40	2.64	4.26	1.00	4.44	1.68	2.68	7.19	1.15	3.34	1.66	6.76				
STA AV	2.62	3.67	3.69	2.37	2.97	2.72	2.61	3.32	3.31	3.23	2.51	3.22				
NOTES: PRECIPITATION AMOUNTS ARE THIESSEN WEIGHTED VALUES FROM GAGES R-1 & R-2. STA AV IS FOR PERIOD SEPTEMBER 1960 THROUGH 1967. FOR TOPOGRAPHIC (REVISED DRAINAGE PATTERN) MAP OF WATERSHED, SEE P. 13.14-5 THIS VOLUME.																

NOTES: PRECIPITATION AMOUNTS ARE THIESSEN WEIGHTED VALUES FROM GAGES R-1 & R-2. STA AV IS FOR PERIOD SEPTEMBER 1960 THROUGH 1967. FOR TOPOGRAPHIC (REVISED DRAINAGE PATTERN) MAP OF WATERSHED, SEE P. 13.14-5 THIS VOLUME.

1967 MEAN DAILY DISCHARGE (cfs)						BLACKSBURG, VIRGINIA				FOSTERS CREEK W-I			
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	
1	.36	.19	.21	.25	.18	.14	.05	.02	.05	.04	.09	.13	
2	.49	.18	.20	.23	.19	.13	1.01	.01	.05	.03	.17	.14	
3	.62	.17	.21	.22	.19	.12	.30	.03	.04	.04	.12	3.51	
4	.56	.17	.20	.21	.15	.11	.09	.05	.04	.04	.09	.41	
5	.52	.17	.22	.27	.15	.10	.06	.33	.04	.04	.08	.22	
6	.35	.16	.26	.26	.19	.11	.05	.10	.04	.04	.08	.17	
7	.34	.17	5.19	.22	2.34	.09	.07	.04	.04	.14	.08	.15	
8	.95	.17	.56	.19	.43	.09	.11	.03	.04	.09	.08	.13	
9	.56	.16	.37	.20	.25	.08	.07	.04	.07	.09	.08	.13	
10	.33	.20	.32	.22	.18	.08	.06	.13	.06	.62	.08	4.68	
11	.26	.23	.35	.19	.20	.07	.05	.05	.04	.13	.08	9.09	
12	.21	.25	.39	.19	.16	.06	.04	.03	.04	.07	.08	2.41	
13	.19	.21	.39	.20	.16	.06	.05	.02	.04	.06	.08	.45	
14	.28	.51	1.92	.22	1.29	.08	.06	.02	.03	.05	.08	.28	
15	.22	.85	4.70	.20	1.26	.07	.13	.02	.03	.06	.08	.21	
16	.18	.44	.87	.19	.51	.07	.06	.02	.04	.06	.07	.18	
17	.17	.31	.44	.23	.25	.06	.05	.02	.06	.06	.09	.17	
18	.16	.29	.32	.21	.20	.06	.09	.01	.05	.56	.09	.41	
19	.14	.31	.30	.17	.17	.07	.06	.02	.06	.11	.08	.29	
20	.17	.64	.35	.17	.14	.06	.05	.03	.09	.07	.08	.21	
21	.19	1.07	1.91	.17	.18	.05	.05	.08	.14	.06	.09	.19	
22	.19	.50	.63	.18	.25	.06	.03	.27	.14	.06	.10	2.78	
23	.17	.42	.42	.16	.18	.22	.03	1.94	.13	.06	.12	1.86	
24	.17	.30	.33	.16	.15	.11	.02	6.24	.13	.06	.15	.41	
25	.17	.24	.31	.15	.13	.18	.03	1.28	.13	.21	.21	.31	
26	.16	.21	.28	.28	.12	.11	.02	.18	.13	.12	.11	.24	
27	1.85	.22	.28	.34	.11	.05	.02	.10	.13	.08	.09	.20	
28	.43	.23	.31	.20	.11	.04	.02	.07	.27	.08	.09	4.62	
29	.25	-----	.31	.20	.25	.04	.02	.06	.07	.08	.09	1.98	
30	.20	-----	.26	.19	.17	.07	.03	.06	.04	.07	.17	.55	
31	.19	-----	.25	-----	.19	-----	.03	.05	-----	.07	-----	.41	
MEAN	.36	.32	.74	.21	.34	.09	.09	.37	.07	.11	.10	1.19	
INCHES	.68	.55	1.41	.38	.64	.16	.17	.69	.14	.21	.18	2.26	

NOTES TO CONVERT CFS TO IN/DAY, MULTIPLY BY 0.061187.

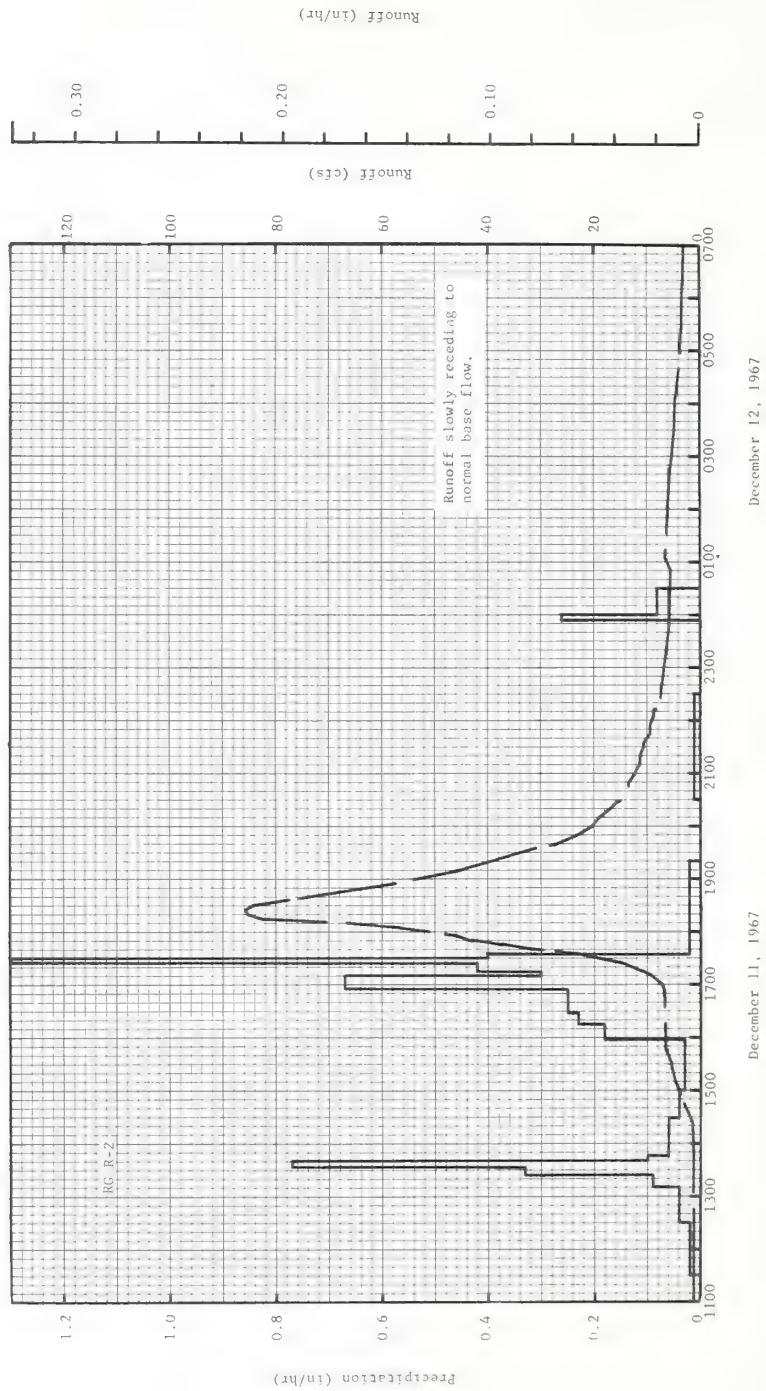
1967 SELECTED RUNOFF EVENT						BLACKSBURG, VIRGINIA				FOSTERS CREEK W-I			
ANTECEDENT CONDITIONS			RAINFALL			DATE			TIME			RATE	
DATE	RAINFALL	RUNOFF	DATE	TIME	INTENSITY	ACC.	DATE	TIME	DATE	TIME	DATE	TIME	ACC.
MO-DAY	(inches)	(inches)	MO-DAY	OF DAY	(in/hr)	(inches)	MO-DAY	OF DAY	MO-DAY	OF DAY	MO-DAY	OF DAY	(inches)
Event of December 11-13, 1967													
RG R-1			RG			R-2			12-11				
12-11	1/.02	2/.0810	12-11	1130	.00	.00	12-11	1215	1.2401	.0000			
				1230	.02	.02		1355	1.3264	.0054			
				1310	.04	.05		1405	1.3539	.0060			
				1324	.09	.07		1425	1.7777	.0073			
12-11	3/.03			1333	.33	.12		1435	2.2565	.0082			
RG R-2				1340	.77	.21		1445	3.0256	.0093			
				1346	.10	.22		1455	3.6535	.0107			
				1429	.06	.26		1500	4.1636	.0116			
				1500	.04	.28		1505	4.3088	.0125			
				1558	.03	.31		1510	4.7641	.0134			
Watershed conditions				1615	.18	.36		1525	5.3723	.0167			
Woods, mostly dormant hardwood,				1628	.23	.41		1530	5.3723	.0178			
some pine, good cover, 44%; pas-				1654	.25	.52		1545	6.2671	.0215			
ture, mostly dormant native				1710	.67	.70		1645	6.5653	.0379			
grass, good cover, 28%; hay,				1714	.30	.72		1650	6.8596	.0393			
dormant, good cover, 19%; idle,				1724	.42	.79		1655	6.8596	.0407			
good cover of weeds and grass,				1730	1.30	.92		1700	7.3894	.0423			
1 to 1½ ft. tall, 1%; other, 1%;				1733	.40	.94		1710	9.2927	.0458			
corn stubble, fair cover, 5%;				1850	.02	.97		1715	10.8349	.0479			
paved roads, 2%.				1920	.02	.98		1725	14.9554	.0534			
				2030	.00	.98		1735	23.8439	.0617			
				2230	.01	1.00		1740	31.6335	.0675			
				2353	.00	1.00		1745	37.4100	.0749			
				2400	.26	1.03		1750	43.2964	.0834			
			12-12	0030	.08	1.07		1755	46.1023	.0929			
				RG									
				2 RG									
				RG		1.05		1800	51.1293	.1033			
				AVG 4/		1.06		1805	56.6821	.1147			
								1810	66.4653	.1278			
								1815	82.2644	.1436			
								1820	85.5451	.1614			

NOTES: TO CONVERT CFS TO IN/HR, MULTIPLY BY 0.0025495. FOR 30-DAY ANTECEDENT P & Q, SEE DAILY TABLES ON THIS AND PREVIOUS PAGE. 1/ .01 IN. FROM 0100 TO 0200; .01 IN. FROM 0900 TO 1000. 2/ CONTINUOUS FLOW PRIOR TO 1215. 3/ .01 IN. FROM 0100 TO 0200; .02 IN. FROM 0600 TO 0700. 4/ THIESSEN WEIGHTED FOR RG R-1 AND R-2.

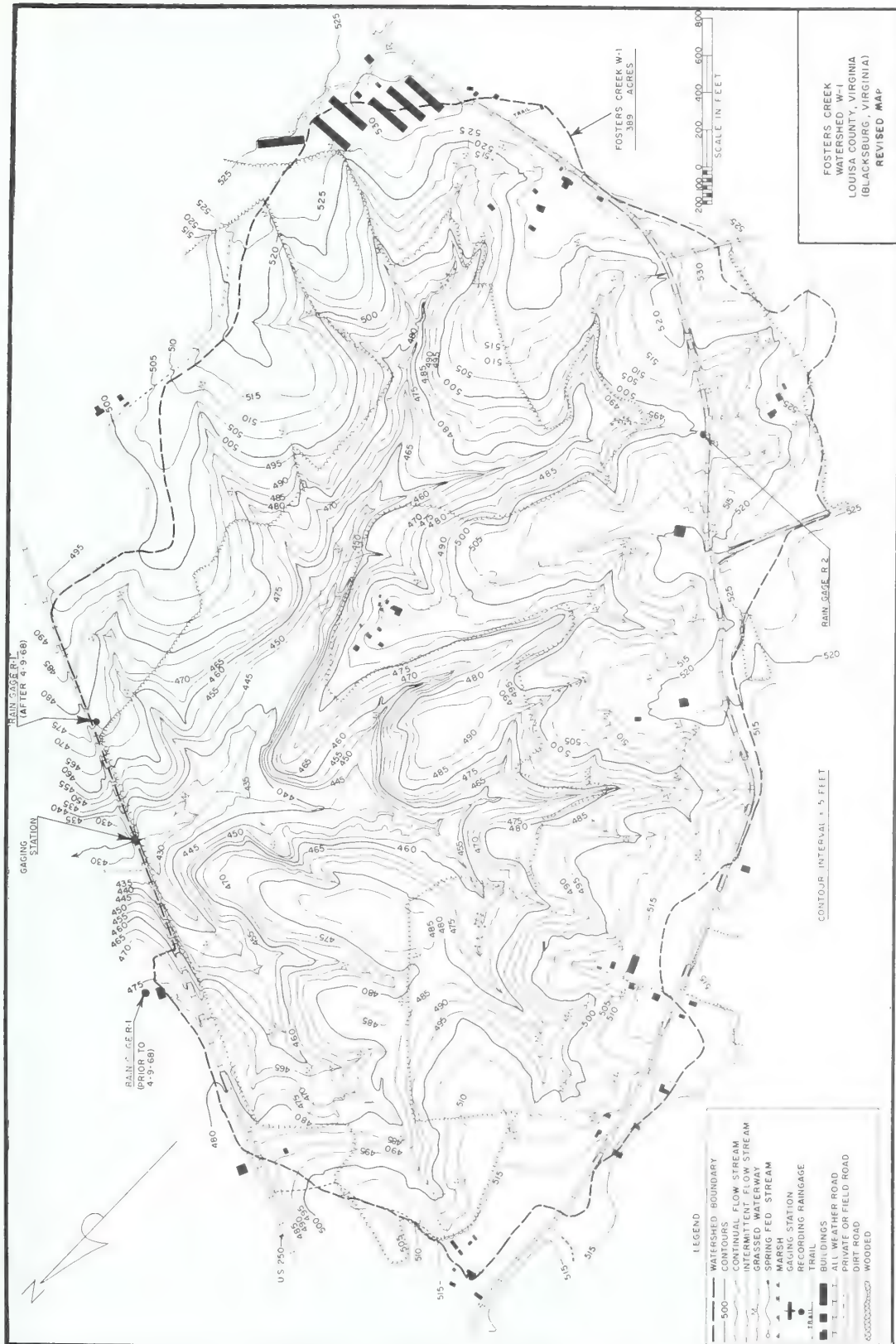
1967 SELECTED RUNOFF EVENT			BLACKSBURG, VIRGINIA				FOSTERS CREEK W-I		13.14		
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)	
			Event of December 11-13, 1967 - Continued								
							12-11	1825	85.9532	.1796	
								1830	84.2148	.1977	
								1835	79.6155	.2151	
								1840	74.0823	.2314	
								1845	68.5059	.2465	
								1855	57.5258	.2733	
								1900	53.8723	.2851	
								1910	44.9525	.3061	
								1925	36.5624	.3321	
								1935	30.7113	.3464	
								1940	27.6190	.3526	
								1950	23.3455	.3634	
								1955	21.9367	.3682	
								2000	20.1119	.3727	
								2010	18.9150	.3809	
								2020	16.6350	.3885	
								2025	16.0660	.3920	
								2030	15.0574	.3953	
								2045	13.6682	.4044	
								2050	13.6015	.4073	
								2055	12.6204	.4101	
								2110	11.3529	.4177	
								2115	11.3804	.4202	
								2125	10.8584	.4249	
								2130	10.4150	.4271	
								2135	10.4150	.4294	
								2145	9.4732	.4336	
								2155	9.4732	.4376	
								2205	8.5588	.4414	
								2210	8.5745	.4433	
								2225	7.6837	.4484	
								2235	7.6680	.4517	
								2240	7.2089	.4533	
								2305	6.4947	.4605	
								2350	5.9178	.4724	
							12-12	2400	5.9217	.4749	
								0050	5.6549	.4872	
								0105	6.2514	.4910	
								0240	5.8982	.5155	
								0255	5.2938	.5191	
								0330	4.8543	.5266	
								0405	4.3991	.5335	
								0440	3.9949	.5397	
								0525	3.6378	.5470	
								0615	1/3.2768	.5544	
								0705	2.9824	.5610	
								0800	2.6881	.5676	
								0850	2.4252	.5731	
								0945	2.1976	.5785	
								1045	1.9661	.5838	
								1150	1.7698	.5889	
								1310	1.5776	.5946	
								1425	1.3970	.5994	
								1540	1.2361	.6036	
								1700	1.0752	.6075	
								1840	.9457	.6118	
								2035	.8162	.6161	
								2300	.7024	.6208	
								2400	.7024	.6225	
							12-13	0235	.5965	.6268	
								0655	.4945	.6329	
								1220	.4160	.6391	
								1950	.3375	.6463	

NOTES: TO CONVERT CFS TO IN/HR, MULTIPLY BY 0.0025495. 1/ RUNOFF SLOWLY RECEDING TO NORMAL BASE FLOW.

NOTES: TO CONVERT CFS TO IN/HR, MULTIPLY BY 0.0025495. 1/ RUNOFF SLOWLY RECEDING TO NORMAL BASE FLOW.



BLACKSBURG, VIRGINIA FOSTERS CREEK W-I



(Revision of Previously Published Map, P. 13.14-4, 1960-61)

MONTHLY PRECIPITATION AND RUNOFF (inches)						BLACKSBURG, VIRGINIA AREA—1058 ACRES (1.65 SQ. MILES)								CHESTNUT BRANCH W-I 13.15		
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	P 1/	1.82	1.84	3.40	1.83	3.49	1.77	3.69	11.82	1.33	1.94	1.08	5.83	39.84		
	Q	.91	.66	1.11	.45	.44	.22	.15	2.93	.25	.23	.22	.97	8.54		
STA AV 2/P	(60-67)P	2.63	3.83	3.47	2.07	3.22	2.93	3.30	3.77	3.64	2.75	3.05	3.09	37.75		
	Q	.93	1.33	1.40	.76	.50	.44	.26	.60	.28	.45	.56	.73	8.24		
MEAN P 3/	37 YR	3.33	3.14	3.99	3.27	3.87	4.24	4.37	5.04	3.42	3.00	2.97	3.34	43.98		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	8-23	.39	8-23	.33	8-24	.55	8-24	1.03	8-23	1.63	8-23	2.26	8-22	2.42	8-20	2.80
MAXIMUMS FOR PERIOD OF RECORD																
1960 TO 1967	8-23 1967	.39	8-23 1967	.33	8-24 1967	.55	8-24 1967	1.03	8-23 1967	1.63	8-23 1967	2.26	8-22 1967	2.42	8-20 1967	2.80
Notes: Watershed conditions: Mixed cover; corn, 10%; tobacco, 1%; hay mixture such as alfalfa, red clover, lespedeza and native grass, 22%; other cultivated areas, 1%; total cultivated, 34%; permanent pasture, usually a good cover of native grass mixture, 26%; farm woods, a mixture of hardwoods and pine, 37%; idle land with good cover of weeds and annual grasses, 2%; roads, 1%. 1/ Precipitation Thiessen weighted from R-1, R-2 and R-3. 2/ Determined from continuous records from September, 1960 through 1967, precipitation Thiessen weighted. 3/ Mean P based on 37-yr (1931-67) U.S. Weather Bureau record period at Bedford, Virginia. Missing totals for 16 months were estimated from nearby Weather Bureau records at Lynchburg, Virginia (Airport).																

1967 DAILY PRECIPITATION (inches)						BLACKSBURG, VIRGINIA							CHESTNUT BRANCH W-I 13.15	
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC		
1	.00	.00	.00	.00	.09	.14	.00	.00	.00	.00	.00	.00		
2	.00	.03	.00	.00	.37	.00	.02	.00	.00	.00	.14	.31		
3	.00	.00	.00	.00	.00	.05	.00	.00	.00	.00	.00	.86		
4	.20M	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		
6	.00	.16S	.39	.00	.05	.00	.01	.00	.00	.02	.00	.00		
7	.02	.29S	1.25	.00	.97	.00	.14	.76	.00	.09	.00	.00		
8	.22	.00	.00	.00	.04	.00	.53	.00	.00	.00	.00	.00		
9	.00	.11S	.00	.00	.00	.00	.01	.26	.14	.17	.00	.04		
10	.00	.00	.00	.00	.00	.00	.14	.00	T	.47	.00	1.40		
11	.00	.00	.00	.00	.10	.00	.19	.00	.00	.00	.00	.44		
12	.00	.00	.24	.00	.00	.00	.00	.00	.00	.00	.00	T		
13	.01	.00	.17	.44	.00	.00	.02	.00	.00	.00	.00	.00		
14	.31	.00	.29	.00	.21	.00	.72	.00	.00	.00	.00	.00		
15	.00	.00	.29	.00	.53	.00	.00	.00	.00	.00	.00	.00		
16	.00	.00	.00	.00	.00	.00	.51	.00	.00	.00	.00	.00		
17	.00	.65S	.00	.54	.00	.00	.04	.00	.00	.00	.02	.00		
18	.00	.21S	.00	.00	.00	.00	.55	.00	.00	.56	.00	.49		
19	.27S	.00	.00	.00	.01	.00	.00	.05	.00	.00	.00	.00		
20	.00	.39	.17M	.00	.00	.00	.33	1.51	.00	.00	.00	.00		
21	.00	.00	.57	T	.18	.00	.00	.89	.47	.00	.03	.00		
22	.00	.00	.00	.09	.28	.35	.00	2.12	.00	.00	.04	.46		
23	.00	.00	.00	.00	.00	.61	.00	3.07	.00	.00	.01	.00		
24	.00	.00	.00	.00	.00	.00	.00	2.63	.00	.00	.28	.00		
25	.00	.00	.00	.00	.00	.50	.00	.00	.00	.63	.00	.00		
26	.00	.00	.00	.66	.00	.00	.00	.00	.00	.00	.00	.00		
27	.79	.00	.00	.10	.00	.00	.00	.53	.24	.00	.00	.00		
28	.00	.00	.03	.00	.00	.00	.00	.00	.48	.00	.00	1.50M		
29	.00	-----	.00	.00	.11	.00	.00	.00	.00	.00	.00	.00		
30	.00	-----	.00	.00	.05	.12	.00	.00	.00	.00	.56	.00		
31	.00	-----	.00	-----	.50	-----	.48	.00	-----	.00	-----	.33S		
TOTAL	1.82	1.84	3.40	1.83	3.49	1.77	3.69	11.82	1.33	1.94	1.08	5.83		
STA AV	2.63	3.83	3.47	2.07	3.22	2.93	3.30	3.77	3.64	2.75	3.05	3.09		
NOTES: PRECIPITATION VALUES ARE THIESSEN WEIGHTED AMOUNTS FROM R-1, R-2 AND R-3. STA AV IS FOR PERIOD SEPTEMBER 1960 THROUGH 1967. FOR DRAINAGE PATTERN MAP OF WATERSHED SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, MISC. PUB. 994, P. 13.15-5.														

1967 MEAN DAILY DISCHARGE (cfs)						BLACKSBURG, VIRGINIA			CHESTNUT BRANCH W-I 13.15			
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	1.00	.87	.81	.84	.57	.54	.18	.18	.55	.28	.34	.40
2	1.24	.84	.81	.66	.60	.44	.20	.14	.49	.29	.35	.40
3	2.11	.81	.81	.77	.65	.45	.16	.13	.48	.28	.34	2.59
4	2.46	.78	.78	.73	.53	.41	.14	.14	.43	.27	.30	.68
5	2.15	.75	.75	.75	.51	.39	.14	.13	.43	.28	.30	.53
6	1.63	.71	.74	.75	.54	.38	.16	.11	.41	.27	.30	.49
7	1.48	.80	10.40	.68	1.78	.36	.17	.51	.40	.30	.30	.45
8	2.47	.70	2.54	.67	.88	.35	.28	.20	.37	.32	.28	.42
9	2.05	.68	1.69	.67	.73	.33	.24	.19	.44	.32	.31	.42
10	1.60	.71	1.40	.70	.61	.32	.16	.18	.44	.48	.31	4.55
11	1.21	.70	1.23	.64	.65	.29	.24	.13	.36	.33	.32	3.97
12	1.04	.72	1.28	.61	.57	.30	.14	.12	.34	.30	.30	2.14
13	1.01	.72	1.46	.83	.55	.28	.16	.12	.34	.30	.32	1.16
14	1.27	.86	1.92	.69	.67	.27	.26	.12	.33	.30	.30	.94
15	1.01	.87	2.40	.64	1.12	.28	.33	.11	.30	.30	.29	.77
16	.93	.78	1.74	.59	.75	.25	.60	.10	.30	.30	.29	.69
17	.87	.84	1.47	.92	.64	.25	.22	.09	.30	.28	.31	.64
18	.81	.86	1.31	.70	.57	.26	.47	.09	.30	.52	.30	1.16
19	.85	.99	1.16	.58	.51	.26	.24	.10	.30	.37	.29	.82
20	.81	2.57	1.23	.56	.50	.24	.28	1.56	.30	.34	.30	.75
21	.86	3.00	2.49	.59	.50	.23	.25	1.39	.49	.33	.32	.64
22	.87	1.97	1.57	.62	.69	.24	.21	5.35	.33	.30	.30	1.07
23	.81	1.56	1.33	.54	.54	.60	.18	42.51	.28	.30	.34	1.02
24	.78	1.21	1.20	.52	.46	.24	.17	63.48	.29	.30	.35	.84
25	.75	1.09	1.11	.50	.47	.41	.17	4.28	.27	.66	.34	.75
26	.72	.96	1.04	.86	.45	.27	.15	1.82	.28	.39	.28	.65
27	3.01	.93	.98	.75	.43	.24	.15	3.17	.31	.34	.30	.64
28	1.47	.90	.96	.56	.40	.24	.14	1.38	.48	.33	.30	6.50
29	1.16	-----	.93	.53	.45	.24	.14	.94	.35	.31	.30	3.73
30	1.01	-----	.87	.55	.45	.25	.14	.77	.29	.32	.61	1.90
31	.93	-----	.84	-----	.64	-----	.21	.68	-----	.35	-----	1.44
MEAN	1.30	1.04	1.59	.67	.63	.32	.22	4.20	.37	.33	.32	1.39
INCHES	.91	.66	1.11	.45	.44	.22	.15	2.93	.25	.23	.22	.97

NOTES TO CONVERT CFS TO IN/DAY, MULTIPLY BY 0.022497.

1967			SELECTED RUNOFF EVENT				BLACKSBURG, VIRGINIA				CHESTNUT BRANCH W-I				13.15	
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)						
Event of August 23-26, 1967																
8-23	RG R-1 1/ .05	2/.0513	8-23	1433	R-2 .00	.00	8-23	1610	1.5250	.0000						
				1436	.20	.01		1615	1.6849	.0001						
	RG R-2			1600	.01	.02		1620	2.0262	.0003						
8-23	3/ .07			1608	.08	.03		1625	2.6127	.0005						
				1610	.60	.05		1630	4.1270	.0007						
	RG R-3			1615	.36	.08		1635	9.6724	.0013						
8-23	.00			1630	.76	.27		1640	30.7555	.0028						
				1634	1.50	.37		1645	72.4951	.0069						
				1640	3.50	.72		1650	140.1914	.0152						
				1644	3.00	.92		1700	260.5154	.0465						
				1648	3.60	1.16		1705	264.9091	.0670						
				1654	.50	1.21		1710	247.3771	.0870						
<u>Watershed conditions</u>				1705	.00	1.21		1715	249.4567	.1065						
Woods, mixture of hardwood & conifers, good cover, 37%; pasture, native grass mixture, good cover, 26%; hay, mostly clovers, grass & weeds, 12 to 18 in. high, excellent cover, 22%; corn, 6½ to 7 ft. high, good cover, 10%; tobacco, 3 to 4 ft. high, fair cover, 1%; idle, good cover of grass and weeds, 12 to 18 in. high, 3%; roads, 1%.				1710	1.08	1.30		1720	308.0457	.1282						
				1721	.60	1.41		1725	392.3354	.1556						
				1728	.77	1.50		1730	417.6096	.1873						
				1736	.30	1.54		1735	413.0666	.2197						
				1745	.33	1.59		1740	397.8915	.2514						
				1800	.12	1.62		1745	384.9878	.2820						
				1830	.02	1.63		1755	346.1382	.3391						
				1920	.02	1.65		1800	324.6498	.3653						
				2050	.31	1.67		1805	303.4068	.3899						
				2105	.12	1.70		1810	279.6683	.4126						
				2110	.24	1.72		1815	256.7403	.4336						
				2120	.12	1.74		1820	230.3251	.4526						
				2125	.24	1.76		1825	201.2545	.4695						
				2128	1.00	1.81		1830	174.4661	.4842						
				2135	1.97	2.04		1835	144.8623	.4967						
				2138	.80	2.08		1840	125.5068	.5072						
				2146	.22	2.11		1845	111.6327	.5165						

NOTES: TO CONVERT CFS TO IN/HR, MULTIPLY BY 0.0009374. FOR 30-DAY ANTECEDENT P & Q, SEE DAILY TABLES ON THIS AND PREVIOUS PAGE. 1/ .04 IN. FROM MDT. 8-22-67 TO 0245, 8-23-67; .01 IN. FROM 0400 TO 0500. 2/ CONTINUOUS FLOW PRIOR TO 1610. 3/ .04 IN. FROM MDT. 8-22-67 TO 0230, 8-23-67; .03 IN. FROM 0430 TO 0710.

1967 SELECTED RUNOFF EVENT			BLACKSBURG, VIRGINIA				CHESTNUT BRANCH W-I		13.15		
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)	
			Event of August 23-26, 1967 - Continued								
			8-23	RG 2150 2204 2207 2218 2246	R-2 .75 1.07 .60 .16 .09	2.16 2.41 2.44 2.47 2.51	8-23	1850 1855 1900 1905 1910	100.8619 89.3659 78.0832 70.3090 61.4684	.5248 .5322 .5388 .5446 .5497	
				2252 2258 2305 2320 2340	.20 .10 .43 .16 .09	2.53 2.54 2.59 2.63 2.66		1920 1930 1935 1940 1945	55.0165 46.8691 44.5230 41.5583 39.3402	.5588 .5668 .5703 .5737 .5769	
			8-24	2400 0030 0045 0052 0055	.21 .14 .24 .34 1.00	2.73 2.80 2.86 2.90 2.95		1950 2005 2010 2015 2020	36.4928 30.9581 30.0197 29.4332 27.8015	.5798 .5877 .5901 .5924 .5947	
				0058 0102 0110 0140 0144	.80 .15 .38 .10 .30	2.99 3.00 3.05 3.10 3.12		2025 2030 2035 2040 2045	26.8524 26.2659 24.6769 24.1970 23.1200	.5968 .5989 .6009 .6028 .6046	
				0205 0207 0237 0244 0254	.17 .90 .40 .86 1.80	3.18 3.21 3.41 3.51 3.81		2115 2120 2130 2135 2140	20.1446 20.2939 22.7680 27.7802 30.0623	.6148 .6164 .6197 .6217 .6240	
				0259 0330 0340 0354 0405	1.20 .14 .06 .34 .22	3.91 3.98 3.99 4.07 4.11		2145 2150 2155 2200 2205	31.0115 35.4371 77.6459 132.0760 149.1280	.6263 .6289 .6334 .6416 .6525	
				0410 0414 0430 0440 0454	1.32 1.80 .15 .18 .64	4.22 4.34 4.38 4.41 4.56		2210 2215 2220 2225 2230	172.5785 190.3664 193.1817 190.1211 191.2729	.6651 .6793 .6943 .7093 .7242	
				0520 0540 0610 0616 0745	.25 .15 .04 .20 .01	4.67 4.72 4.74 4.76 4.77		2235 2240 2245 2250 2255	196.1571 200.9879 198.5245 192.2966 182.9441	.7393 .7548 .7704 .7857 .8004	
				0820 0847 0900 0905 0950	.05 .09 .18 .48 .09	4.80 4.84 4.88 4.92 4.99		2300 2305 2310 2320 2325	172.8345 156.0064 140.6713 106.3433 95.3058	.8143 .8271 .8387 .8580 .8659	
				1014 1018 1100 1150 1200	.08 .15 .04 .02 .06	5.02 5.03 5.06 5.08 5.09		2330 2335 2340 2345 2350	84.4497 75.6731 70.4263 69.6691 64.2944	.8729 .8792 .8849 .8904 .8956	
				1216 1300 1350 1500 1544	.15 .03 .01 .04 .01	5.13 5.15 5.16 5.21 5.22	8-24	2355 2400 0015 0020 0025	60.3593 58.8450 53.7795 53.7048 51.0921	.9005 .9051 .9183 .9225 .9266	
				1700 2050 2220	.03 .00 .06	5.26 5.26 5.35		0030 0040 0050 0055 0100	49.6205 48.2128 50.0257 51.7853 54.2700	.9306 .9382 .9459 .9499 .9540	
			8-23	RG 1553 1559 1613 1622 1627	R-3 .00 .20 .69 1.33 1.80	.00 .02 .18 .38 .53		0105 0110 0115 0120 0125	56.2323 61.6923 65.9793 70.7782 71.3861	.9583 .9629 .9679 .9733 .9788	
Continued on next page											
NOTES: TO CONVERT CFS TO IN/HR, MULTIPLY BY 0.0009374.											

1967 SELECTED RUNOFF EVENT			BLACKSBURG, VIRGINIA				CHESTNUT BRANCH W-I 13.15			
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL, (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)
Event of August 23-26, 1967 - Continued										
8-23			8-23	RG	R-3		8-24			
				1632	3.60	.83		0130	73.8602	.9845
				1637	7.20	1.43		0135	73.7748	.9903
				1640	2.80	1.57		0145	77.4220	1.0021
				1646	.60	1.63		0150	80.1094	1.0082
				1657	.65	1.75		0155	80.8665	1.0145
				1700	2.40	1.87		0215	77.8699	1.0393
				1706	.00	1.87		0225	80.0241	1.0517
				1710	.60	1.91		0230	82.6794	1.0580
				1714	2.85	2.10		0235	90.8162	1.0648
				1720	1.00	2.20		0240	102.7281	1.0724
				1726	.50	2.25		0245	140.0954	1.0819
				1738	.20	2.29		0250	192.4353	1.0949
				1746	.08	2.30		0255	258.8305	1.1125
				1810	.08	2.33		0300	308.8135	1.1347
				1920	.01	2.34		0305	327.5932	1.1595
				1940	.03	2.35		0310	328.7236	1.1852
				2033	.00	2.35		0315	319.4137	1.2105
				2040	.09	2.36		0320	309.0801	1.2351
				2050	.06	2.37		0325	305.3797	1.2591
				2055	.36	2.40		0335	316.5877	1.3077
				2057	.60	2.42		0340	311.0103	1.3322
				2110	.23	2.47		0345	308.5043	1.3564
				2115	.48	2.51		0350	294.2142	1.3800
				2119	1.95	2.64		0355	284.2752	1.4026
				2123	1.80	2.76		0400	280.0842	1.4246
				2129	1.00	2.86		0405	282.0571	1.4466
				2135	.30	2.89		0410	293.9476	1.4691
				2140	.84	2.96		0415	302.6709	1.4924
				2150	.90	3.11		0420	304.3772	1.5161
				2155	2.04	3.28		0425	297.3815	1.5396
				2210	.20	3.33		0430	285.1284	1.5624
				2230	.12	3.37		0435	267.1272	1.5840
				2240	.06	3.38		0440	240.8933	1.6038
				2250	.24	3.42		0445	224.8864	1.6220
				2300	.18	3.45		0450	222.4976	1.6395
				2330	.10	3.50		0455	226.4220	1.6570
				2400	.14	3.57		0500	235.8918	1.6751
				0015	.20	3.62		0505	247.4411	1.6940
				0030	.16	3.66		0510	251.6108	1.7135
0045	.40	3.76	0515	251.9094	1.7331					
0047	1.50	3.81	0520	245.9055	1.7526					
0100	.23	3.86	0525	236.8516	1.7715					
0140	.13	3.95	0530	220.1408	1.7893					
0205	.26	4.06	0535	207.2691	1.8060					
0211	.50	4.11	0540	197.3514	1.8218					
0230	.66	4.32	0545	190.7372	1.8370					
0235	1.44	4.44	0550	184.2665	1.8516					
0242	1.29	4.50	0555	174.4234	1.8656					
0245	2.80	4.73	0600	163.7379	1.8788					
0250	1.44	4.85	0605	152.4552	1.8911					
0255	.24	4.87	0615	134.0808	1.9135					
0310	.12	4.90	0625	110.0011	1.9326					
0325	.12	4.93	0635	96.2336	1.9487					
0340	.16	4.97	0645	83.9911	1.9628					
0347	.60	5.04	0650	76.8461	1.9691					
0354	.09	5.05	0655	72.8791	1.9749					
0400	1.60	5.21	0700	69.5092	1.9805					
0406	2.20	5.43	0705	65.3715	1.9858					
0410	.30	5.45	0715	60.3593	1.9956					
0420	.12	5.47	0720	56.8934	2.0002					
0433	.18	5.51	0725	54.4300	2.0045					
0444	.55	5.61	0740	49.4818	2.0167					
0510	.25	5.76	0745	47.0717	2.0205					
0520	.24	5.80	0805	41.0784	2.0343					
0530	.06	5.81	0810	40.3320	2.0374					
Continued on next page										

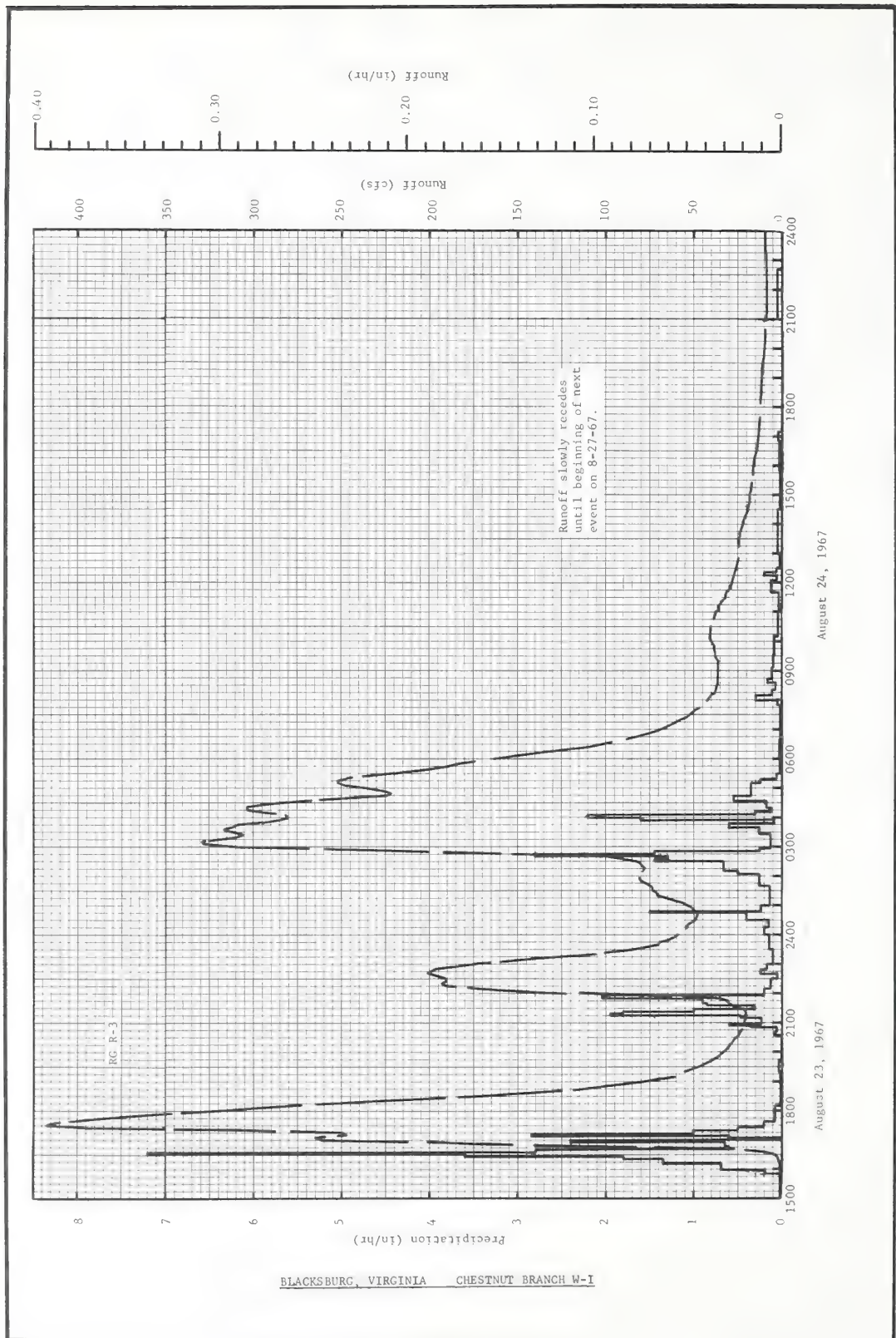
NOTES: TO CONVERT CFS TO IN/HR, MULTIPLY BY 0.0009374.

NOTES: TO CONVERT CFS TO IN/HR, MULTIPLY BY 0.0009374.

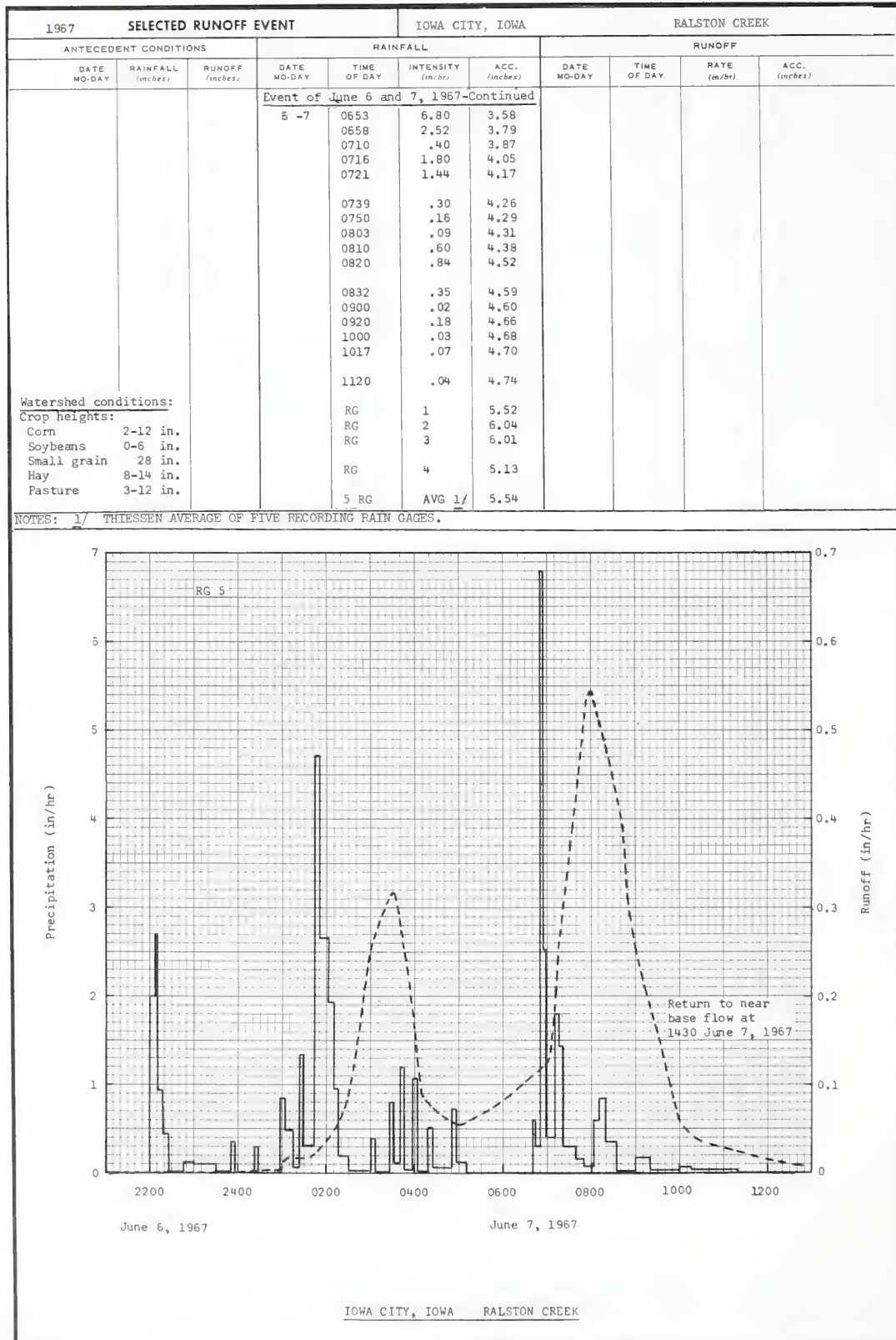
1967			SELECTED RUNOFF EVENT				BLACKSBURG, VIRGINIA				CHESTNUT BRANCH W-I				13.15	
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)						
Event of August 23-26, 1967 - Continued																
			8-24	RG 0600 0640 0750 0800 0810	R-3 .02 .03 .01 .06 .30	5.82 5.84 5.85 5.86 5.91	8-24	0815 0835 0920 0930 0935	38.8496 36.2262 36.3542 37.6126 37.6126	2.0405 2.0523 2.0778 2.0836 2.0865						
				0821 0837 0844 0905 0930	.11 .08 .17 .11 .10	5.93 5.95 5.97 6.01 6.05		0945 0950 1005 1030 1045	39.0949 39.0949 41.3131 40.4493 38.2311	2.0925 2.0956 2.1050 2.1210 2.1302						
				1010 1100 1140 1150 1205	.09 .04 .03 .12 .12	6.11 6.14 6.16 6.18 6.21		1050 1100 1105 1110 1125	38.2311 36.7381 35.5331 35.5971 33.5922	2.1332 2.1390 2.1419 2.1446 2.1527						
				1215 1221 1230 1300 1430	.06 .20 .07 .02 .04	6.22 6.24 6.25 6.26 6.32		1130 1135 1140 1145 1150	32.3871 32.3871 31.0754 30.5529 29.4865	2.1553 2.1579 2.1603 2.1627 2.1651						
				1550 1650 1710 2100 2240	.01 .02 .03 .00 .06	6.33 6.35 6.36 6.36 6.46		1155 1225 1250 1330 1335	29.0173 25.8820 24.8689 24.8369 24.2930	2.1674 2.1803 2.1902 2.2057 2.2076						
				RG 3 RG	R-1 AVG 1/	5.50 5.65		1340 1400 1405 1430 1435	24.2930 22.1602 22.1602 19.7394 19.7394	2.2095 2.2168 2.2185 2.2267 2.2282						
								1450 1455 1505 1515 1525	18.5024 18.5344 18.0971 17.6919 17.2760	2.2327 2.2342 2.2370 2.2398 2.2425						
								1540 1550 1600 1610 1620	16.4762 16.4868 16.0709 15.6764 15.2818	2.2465 2.2491 2.2516 2.2541 2.2565						
								1635 1645 1700 1740 1825	14.5246 14.5246 13.7355 12.9677 12.2851	2.2600 2.2623 2.2656 2.2739 2.2828						
								1835 1845 1900 1915 1925	12.2745 11.9332 11.3360 11.3360 11.0054	2.2847 2.2866 2.2894 2.2920 2.2938						
								1940 2010 2040 2110 2210	10.3976 9.7807 9.2139 8.7126 8.4674	2.2963 2.3010 2.3055 2.3097 2.3177						
								2255 2310 2325 2400 0015	8.9899 9.0006 9.5231 9.4911 9.2032	2.3230 2.3260 2.3281 2.3333 2.3355						
							8-25	0030 0040 0055 0125 0200	8.7020 8.7020 8.1688 7.6676 7.1450	2.3376 2.3390 2.3410 2.3447 2.3487						
Continued on next page																
NOTES: TO CONVERT CFS TO IN/HR, MULTIPLY BY 0.0009374. 1/ THIESSEN WEIGHTED FOR RG R-1, R-2 & R-3. 2/ RUNOFF SLOWLY RECEDES UNTIL BEGINNING OF NEXT EVENT ON 8-27-67.																

NOTES: TO CONVERT CFS TO IN/HR, MULTIPLY BY 0.0009374. 1/ THIESSEN WEIGHTED FOR RG R-1, R-2 & R-3. 2/ RUNOFF SLOWLY RECEDES UNTIL BEGINNING OF NEXT EVENT ON 8-27-67.

1967 SELECTED RUNOFF EVENT			BLACKSBURG, VIRGINIA				CHESTNUT BRANCH W-I				13.15
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in./hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)	
			Event of August 23-26, 1967 - Continued								
							8-25	0245	6.6864	2.3536	
								0330	6.2599	2.3581	
								0420	5.8440	2.3629	
								0525	5.4281	2.3686	
								0640	5.0122	2.3747	
								0750	4.6389	2.3800	
								0925	4.3190	2.3866	
								1110	3.9884	2.3935	
								1220	3.8284	2.3977	
								1400	3.4979	2.4035	
								1545	3.1673	2.4089	
								1715	2.9220	2.4132	
								1900	2.6767	2.4178	
								2315	2.4314	2.4280	
								2400	2.4314	2.4297	
							8-26	0350	2.1862	2.4380	
								0625	2.1862	2.4433	
								0900	1.9409	2.4483	
								1255	1.7596	2.4551	
								1505	1.5890	2.4585	
NOTES: TO CONVERT CFS TO IN/HR, MULTIPLY BY 0.0009374.											



MONTHLY PRECIPITATION AND RUNOFF (inches)						IOWA CITY, IOWA RALSTON CREEK AREA--1930 ACRES (3.01 SQ.MILES)										
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967 P 1/ Q 2/	.67 .21	.60 .07	2.69 .70	4.65 .97	1.37 .24	7.74 2.32	2.55 .12	5.22 .32	4.46 .18	5.58 .94	1.74 1.19	1.04 .34	38.31 7.60			
STA AV 3/P (25-67) Q	1.11 .43	1.04 .90	2.01 1.24	3.00 .74	3.59 .69	4.63 .81	3.89 .50	3.38 .29	3.53 .33	2.55 .29	2.07 .39	1.23 .26	32.03 6.87			
MEAN P 4/ 117 YR	1.50	1.40	2.33	2.92	4.02	4.54	3.87	3.57	3.97	2.59	2.06	1.55	34.32			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	6 -7	.54	6 -7	.45	6 -7	.78	6 -7	1.29	6 -7	1.66	6 -7	1.70	6 -7	1.74	6 -7	2.19
MAXIMUMS FOR PERIOD OF RECORD																
1925 TO 1967	7-18 1956	.86	7-18 1956	.65	7-14 1962	.93	7-14 1962	2.23	7-14 1962	2.52	7-13 1962	2.62	7-13 1962	2.72	3-18 1962	4.15
Notes: Watershed conditions: Approximately 20% timber; 13% row crops; 6% small grain; 12% hay; 45% pasture; and 4% roads and farmsteads. 1/ Precipitation, Thiessen average of five recording rain gages. 2/ Runoff records furnished by U. S. Geological Survey. 3/ Precipitation and runoff records began Sept. 1, 1924. Sept. 1-Dec. 31, 1924 amounts not included in average. 4/ Mean P based on 117-yr (1851-1967) U. S. Weather Bureau record period at Dubuque, Ia.																
1967 SELECTED RUNOFF EVENT						IOWA CITY, IOWA				RALSTON CREEK						
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
Event of June 6 and 7, 1967																
5 -7	5 RG 5/ .28	.0148	6 -6	RG	5	.00	6 -6	2140	.0006	.0000						
5 -8	.00	.0136		2200	2.00	.20		2200	.0007	.0002						
5 -9	.00	.0106		2210	2.70	.38		2315	.0012	.0015						
5-10	.00	.0114		2217	.95	.49	6 -7	0030	.0009	.0023						
								0030	.0028	.0032						
5-11	.19	.0110		2225	.45	.55		0055	.0034	.0045						
5-12	.00	.0082		2245	.03	.56		0105	.0164	.0062						
5-13	.00	.0078		2300	.12	.59		0130	.0164	.0130						
5-14	.00	.0069		2330	.10	.64		0200	.0374	.0265						
5-15	.00	.0059		2350	.03	.65		0230	.0865	.0574						
5-16	.00	.0042		2355	.36	.68		0250	.1928	.1040						
5-17	.00	.0044	6 -7	0021	.00	.68		0300	.2519	.1410						
5-18	.24	.0061		0025	.30	.70		0330	.3197	.2839						
5-19	.00	.0042		0057	.00	.70		0345	.2519	.3554						
5-20	.00	.0042		0104	.86	.80		0400	.1635	.4073						
5-21	.00	.0032		0115	.49	.89		0410	.0881	.4283						
5-22	.00	.0032		0123	.08	.90		0500	.0535	.4872						
5-23	.03	.0032		0127	1.35	.99		0550	.0776	.5418						
5-24	.00	.0028		0142	.32	1.07		0630	.1013	.6014						
5-25	.00	.0026		0150	4.73	1.70		0700	.1259	.6582						
5-26	.00	.0019		0201	2.67	2.19		0715	.2519	.7055						
5-27	.00	.0019		0210	1.93	2.48		0800	.5449	1.0042						
5-28	.12	.0031		0215	.96	2.56		0845	.3881	1.3541						
5-29	.03	.0033		0230	.20	2.61		0900	.2519	1.4341						
5-30	.27	.0043		0300	.04	2.63		0930	.1593	1.5369						
5-31	.05	.0037		0306	.40	2.67		1000	.0604	1.5918						
6 -1	.00	.0025		0325	.03	2.68		1030	.0374	1.6163						
6 -2	.00	.0021		0331	.80	2.76		1200	.0156	1.6561						
6 -3	.00	.0021		0340	.13	2.78		1300	.0071	1.6674						
6 -4	.00	.0020		0345	1.20	2.88		1430	6/.0049	1.6765						
6 -5	.09	.0022		0357	.05	2.89										
6 -6	.00	7/.0030		0402	1.08	2.98										
				0417	.04	2.99										
				0424	.51	3.05										
				0450	.07	3.08										
				0455	.72	3.14										
				0510	.12	3.17										
				0640	.01	3.18										
				0642	.60	3.20										
				0650	.30	3.24										
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 1946.08. FOR TOPOGRAPHIC MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, USDA MISC. PUB. 1164, P. 21.1-4. 5/ THIESSEN AVERAGE OF FIVE RECORDING RAIN GAGES. 6/ RETURN TO NEAR BASE FLOW. 7/ RUNOFF PRIOR TO 2140.																



MONTHLY PRECIPITATION AND RUNOFF (inches)						McCREIDIE, MISSOURI		STATION RESERVOIR WATERSHED W-1								
						AREA—154 ACRES										
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967 P 1/ Q	1.89 .05	.91 .02	3.39 .16	3.77 .13	4.69 .20	4.24 .12	3.87 .00	.24 .00	1.89 .00	4.79 .05	1.72 .02	2.26 .39	33.66 1.14			
STA AV 2/P (41-67) Q	1.41 .45	1.64 .67	2.77 1.18	3.65 1.10	4.01 .76	4.31 .73	3.52 .41	2.82 .07	3.51 .40	3.33 .78	1.90 .39	1.62 .32	34.49 7.22			
MEAN P 3/ 78 YR	1.82	1.78	2.89	3.71	4.66	4.62	3.50	3.64	4.30	2.88	2.15	1.81	37.76			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
	DATE	RATE	1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
1967	1 -6	.05	12-18	.02	12 -2	.03	5 -6	.06	5 -6	.08	12 -5	.12	12 -4	.15	12 -4	.28
MAXIMUMS FOR PERIOD OF RECORD																
19 41 to 19 67	10 -4 1941	2.02	10 -4 1941	1.20	10 -4 1941	1.96	10 -4 1941	3.94	10 -4 1941	6.97	10 -4 1941	7.74	10 -3 1941	8.06	10 -2 1941	8.80
NOTES: Watershed conditions: 41% pasture and meadow; 28% alfalfa; 10% row crops of corn and soybeans; 15% small grain; and 6% roads and farmsteads. 1/ Precipitation, Thiessen average of 4 recording gages and 1 non-recording gage. 2/ Precipitation and runoff records began Jan. 1, 1941. 3/ Mean P based on 78-yr (1890-1967) U. S. Weather Bureau record period at Columbia, Mo.																
NOTES: NO SIGNIFICANT RUNOFF EVENT FOR PRESENTATION OCCURRED IN 1967. FOR REVISED TOPOGRAPHIC MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1963, USDA MISC. PUB. 1164, P. 25.1-8.																

MONTHLY PRECIPITATION AND RUNOFF (inches)						COSHOCKTON, OHIO WATERSHED 102 AREA - 1.26 ACRES						26.01				
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967 P ₁	.96	1.98	4.85	2.98	4.87	.67	6.87	1.19	3.47	1.61	3.46	2.96	35.87			
O	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00	.01			
STA AV2/P	1.72	2.43	4.18	3.40	3.90	4.69	3.97	3.28	2.36	2.33	2.39	2.21	36.86			
(37-67)g	.03	.06	.14	.06	.01	.18	.03	.04	.02	.01	T	.00	.58			
MEAN P ₃	3.25	2.60	3.60	3.74	3.75	4.33	4.16	3.77	3.13	2.56	2.82	2.82	40.53			
57 YR																
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
	DATE	RATE	1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
1967	7-19	.02	7-19	.01	7-19	.01	7-19	.01	7-19	.01	7-19	.01	7-19	.01	7-19	.01
MAXIMUMS FOR PERIOD OF RECORD																
1937 TO 1967	6-12	3.64	6-12	1.31	6-12	1.32	6-12	1.32	6-12	1.32	6-12	1.33	3-4	1.50	3-1	1.69
1957	1957		1957		1957		1957		1957		1957		1963		1963	
NOTES: Watershed conditions: Improved permanent pasture. 1/ Rain gage Y101. 2/ Precipitation and runoff records began Apr. 1937. Watershed discontinued Jan. 1, 1947, to Apr. 30, 1957, and Sept. 1, 1957, to Mar. 29, 1960. 3/ Mean P based on 57-yr. (1909-65) U.S. Weather Bureau record period at Coshocton, Ohio. 4/ No maximums taken for 1947 through 1956 or 1958 and 1959.																
NO SUITABLE SELECTED RUNOFF EVENT TO REPORT. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 26.1-4. FOR GEOLOGY DESCRIPTION AND MAP, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1962, USDA MISC. PUB. 1070, PP. 26.1-1 AND 26.30-3.																
Cooperative Research Project of USDA and Ohio Agricultural Research and Development Center																
26.1-1																

MONTHLY PRECIPITATION AND RUNOFF (inches)						COSHOCKTON, OHIO WATERSHED 129 AREA - 2.71 ACRES						26.03				
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967 P ₁	.93	1.71	5.08	3.09	5.22	.76	6.38	1.08	3.65	1.56	3.47	2.81	35.74			
O	.00	.00	.00	.00	.01	.00	.02	.00	.00	.00	.00	.01	.04			
STA AV2/P	2.70	2.49	3.51	3.45	3.78	4.07	4.14	2.99	2.58	2.08	2.45	2.17	36.41			
(38-67)g	.05	.12	.18	.05	.05	.15	.06	.04	.04	.01	T	.01	.76			
MEAN P ₃	3.25	2.60	3.60	3.74	3.75	4.33	4.16	3.77	3.13	2.56	2.82	2.82	40.53			
57 YR																
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
	DATE	RATE	1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
1967	7-19	.12	7-19	.02	7-19	.02	7-19	.02	7-19	.02	7-19	.02	7-19	.02	7-19	.02
MAXIMUMS FOR PERIOD OF RECORD																
1937 TO 1967	6-12	2.36E	6-12	.98E	9-1	1.01	3-4	1.53	3-4	2.42	3-4	2.90	3-3	3.51	3-3	4.00
1957	1957		1957		1950		1963		1963		1963		1963		1963	
NOTES: Watershed conditions: Improved permanent pasture. 1/ Rain gage 100. 2/ Precipitation and runoff records began Apr. 1938. 3/ Mean P based on 57-yr. (1909-65) U. S. Weather Bureau record period at Coshocton, Ohio.																
NO SUITABLE SELECTED RUNOFF EVENT TO REPORT. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 26.3-5. FOR GEOLOGY DESCRIPTION AND MAP, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1962, USDA MISC. PUB. 1070, PP. 26.3-1 AND 26.30-3.																

Cooperative Research Project of USDA and Ohio Agricultural Research and Development Center
(See 26.4-1 above)
26.5-1

MONTHLY PRECIPITATION AND RUNOFF (inches)							COSHOCKTON, OHIO		WATERSHED 131 AREA - 2.21 ACRES		26.07					
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	P 1/ Q	.92 .00	1.59 .00	4.37 .00	2.89 .00	4.85 .00	.70 .00	6.28 .00	1.05 .00	3.35 .02	1.58 T	3.35 .00	2.68 T	33.61 .02		
	STA AV2/P (38-67) Q	2.65 .03	2.38 .02	3.35 .04	3.33 .02	3.72 .01	4.00 .03	4.20 T	2.88 T	2.59 .01	2.08 T	2.42 T	2.13 T	35.73 .16		
	MEAN P 3/ 57 YR	3.25	2.60	3.60	3.74	3.75	4.33	4.16	3.77	3.13	2.56	2.82	2.82	40.53		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	9-9	.01	9-9	T	9-28	.01	9-28	.01	9-27	.02	9-27	.02	9-27	.02	9-27	.02
MAXIMUMS FOR PERIOD OF RECORD																
19 38 to 1967	6-12 1957	1.18	6-12 1957	.41	6-12 1957	.45	6-12 1957	.45	6-12 1957	.45	6-12 1957	.45	6-12 1957	.45	6-12 1957	.45
NOTES: Watershed conditions: Uneven age stand of mixed hardwoods in good woodland management. 1/ Rain gage 103. 2/ Precipitation and runoff records began May 1938. 3/ Mean P based on 57-yr. (1909-65) U. S. Weather Bureau record period at Coshocton, Ohio.																
NO SUITABLE SELECTED RUNOFF EVENT TO REPORT. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 26.7-5. FOR GEOLOGY DESCRIPTION AND MAP, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1962, USDA MISC. PUB. 1070, P. 26.7-1 AND 26.30-3.																
Cooperative Research Project of USDA and Ohio Agricultural Research and Development Center																
26.7-1																

MONTHLY PRECIPITATION AND RUNOFF (inches)							COSHOCKTON, OHIO		WATERSHED 132 AREA - 0.590 ACRE		26.08					
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	P 1/ Q	.92 .00	1.59 .02	4.37 1.61	2.89 .15	4.85 .75	.70 .00	6.28 T	1.05 .00	3.35 .00	1.58 .00	3.35 .00	2.68 .02	33.61 2.55		
	STA AV2/P (48-67) Q	3.16 .23	2.55 .23	3.25 .52	3.46 .37	3.20 .12	3.43 .14	4.39 T	2.54 T	2.63 .01	1.85 T	2.54 .00	2.25 .01	35.25 1.63		
	MEAN P 3/ 57 YR	3.25	2.60	3.60	3.74	3.75	4.33	4.16	3.77	3.13	2.56	2.82	2.82	40.53		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	5-7	.05	5-7	.05	5-7	.09	3-5	.22	3-5	.37	3-5	.63	3-5	.76	3-3	.86
MAXIMUMS FOR PERIOD OF RECORD																
19 48 to 19 67	6-12 1957	2.00E	4-25 1961	.73	4-25 1961	.99	4-25 1961	1.37	3-9 1964	1.67	3-9 1964	2.37	3-9 1964	2.78	3-4 1964	3.52
NOTES: Watershed conditions: Uneven age stand of mixed hardwoods in good woodland management. 1/ Rain gage 103. 2/ Precipitation and runoff records began May 1948. 3/ Mean P based on 57-yr. (1909-65) U. S. Weather Bureau record period at Coshocton, Ohio.																
NO SUITABLE SELECTED RUNOFF EVENT TO REPORT. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 26.8-2. FOR GEOLOGY DESCRIPTION AND MAP, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1962, USDA MISC. PUB. 1070, P. 26.8-1 AND 26.30-3.																

MONTHLY PRECIPITATION AND RUNOFF (inches)						COSHOCKTON, OHIO		WATERSHED 123		26.10						
						AREA - 1.37 ACRES										
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	P 1/	.92	1.90	5.17	3.20	5.12	.76	7.00	1.14	3.36	1.56	3.41	2.92	36.46		
	Q	.00	.00	.65	.00	.05	.00	.00	.00	.00	.00	.00	.00	.70		
STA AV2/P		2.74	2.53	3.47	3.57	3.78	4.26	4.27	2.98	2.62	2.21	2.55	2.30	37.28		
(39-67)	Q	.35	.35	.45	.26	.12	.30	.12	.08	.05	.02	.01	.12	2.25		
MEAN P 3/																
57 YR		3.25	2.60	3.60	3.74	3.75	4.33	4.16	3.77	3.13	2.56	2.82	2.82	40.53		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE	MAXIMUM VOLUME FOR SELECTED TIME INTERVAL														
		1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS		
		DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	
1967	3-5	.09	3-5	.08	3-5	.12	3-5	.19	3-5	.31	3-5	.43	3-5	.43	3-5	.43
MAXIMUMS FOR PERIOD OF RECORD																
1939 TO 1967	6-12 1957	5.97	6-12 1957	1.37	6-12 1957	1.48	6-28 1957	1.51	1-21 1959	1.84	1-21 1959	2.33	1-21 1959	2.33	3-4 1964	2.66
Notes: Watershed conditions: First year meadow, of a meadow, meadow, corn, wheat rotation; improved practice. 1/ Rain gage Y103. 2/ Precipitation and runoff records began Jan. 1939. 3/ Mean P based on 57-yr (1909-65) U.S. Weather Bureau record period at Coshockton, Ohio.																
NO SUITABLE SELECTED RUNOFF EVENT TO REPORT. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 26.10-6. FOR GEOLOGY DESCRIPTION AND MAP, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1962, USDA MISC. PUB. 1070, P. 26.10-1 AND 26.30-3.																
Cooperative Research Project of USDA and Ohio Agricultural Research and Development Center																
26.10-1																

MONTHLY PRECIPITATION AND RUNOFF (inches)						COSHOCKTON, OHIO		WATERSHED 115		26.11						
						AREA - 1.61 ACRES										
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	P 1/	.92	1.90	5.17	3.20	5.12	.76	7.00	1.14	3.36	1.56	3.41	2.92	36.46		
	Q	.00	.00	.33	T	.09	.00	T	.00	.00	.00	.00	.06	.48		
STA AV2/P		2.78	2.47	3.47	3.57	3.78	4.26	4.27	2.98	2.62	2.21	2.55	2.30	37.26		
(39-67)	Q	.22	.25	.23	.14	.15	.39	.29	.16	.12	.03	.02	.05	2.05		
MEAN P 3/																
57 YR		3.25	2.60	3.60	3.74	3.75	4.33	4.16	3.77	3.13	2.56	2.82	2.82	40.53		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE	MAXIMUM VOLUME FOR SELECTED TIME INTERVAL														
		1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS		
		DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	
1967	3-6	.10	3-6	.09	3-6	.15	3-6	.21	3-5	.21	3-5	.30	3-5	.31	3-3	.33
MAXIMUMS FOR PERIOD OF RECORD																
1939 TO 1967	6-12 1957	4.12	9-1 1950	1.33	9-1 1950	1.56	9-1 1950	1.58	9-1 1950	1.59	9-1 1950	1.59	3-3 1963	1.66	6-29 1941	2.85
Notes: Watershed conditions: First year meadow, of a meadow, meadow, corn, wheat rotation; prevailing practice. 1/ Rain gage Y103. 2/ Precipitation and runoff records began Apr. 1939. 3/ Mean P based on 57-yr. (1909-65) U. S. Weather Bureau record period at Coshockton, Ohio.																
NO SUITABLE SELECTED RUNOFF EVENT TO REPORT. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 26.11-6. FOR GEOLOGY DESCRIPTION AND MAP, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1962, USDA MISC. PUB. 1070, P. 26.11-1 AND 26.30-3.																

MONTHLY PRECIPITATION AND RUNOFF (inches)						COSHOCKTON, OHIO		WATERSHED 127 AREA - 1.65 ACRES		26.12			
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1967	.92 P1/ o .00	1.90 .02	5.17 .77	3.20 T	5.12 .32	.76 .00	7.00 .00	1.14 .00	3.36 .00	1.56 .00	3.41 .00	2.92 .24	36.46 1.35
STA AV2/P (49-67)	3.17 o .76	2.72 .74	3.41 .62	3.79 .36	3.31 .09	3.59 .27	4.45 .11	2.84 .07	2.65 .08	1.91 .02	2.66 .04	2.41 .27	36.91 3.43
MEAN 57 YR	3.25	2.60	3.60	3.74	3.75	4.33	4.16	3.77	3.13	2.56	2.82	2.82	40.53

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	5-7	.12	3-5	.06	3-5	.09	3-20	.19	3-20	.27	3-5	.33	3-5	.34	3-3	.40

MAXIMUMS FOR PERIOD OF RECORD																
1949 TO 1967	6-12 1957	3.12	9-1 1950	1.33	9-1 1950	1.48	6-12 1957	1.49	1-26 1952	1.97	1-26 1952	2.65	1-25 1952	2.82	1-25 1952	2.85

NOTES: Watershed conditions: First year meadow, of a meadow, meadow, corn, wheat rotation; improved practice.
1/ Rain gage Y103. 2/ Precipitation and runoff records began May 1949. 3/ Mean P based on 57-yr. (1909-65)
U. S. Weather Bureau record period at Coshocton, Ohio.

NO SUITABLE SELECTED RUNOFF EVENT TO REPORT. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 26.12-5. FOR GEOLOGY DESCRIPTION AND MAP, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1962, USDA MISC. PUB. 1070, P. 26.12-1 AND 26.30-3.

Cooperative Research Project of USDA and Ohio Agricultural Research and Development Center

26.12-1

MONTHLY PRECIPITATION AND RUNOFF (inches)						COSHOCKTON, OHIO		WATERSHED 109 AREA - 1.69 ACRES		26.13			
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1967	.91 P1/ o .00	1.43 .00	4.64 .05	3.03 .01	4.92 .02	.74 .00	6.60 .00	1.00 .00	3.37 .00	1.59 .00	3.14 .00	2.72 .00	34.09 .08
STA AV2/P (38-67)	2.63 o .07	2.40 .16	3.42 .14	3.53 .05	3.80 .11	4.24 .28	4.34 .22	2.93 .16	2.64 .05	2.16 .01	2.45 T	2.18 .02	36.72 1.27
MEAN 57 YR	3.25	2.60	3.60	3.74	3.75	4.33	4.16	3.77	3.13	2.56	2.82	2.82	40.53

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	3-6	.01	3-6	T	3-6	.01	3-6	.02	3-6	.02	3-6	.02	3-6	.02	3-6	.02

MAXIMUMS FOR PERIOD OF RECORD																
1939 TO 1967	5-17 1941	4.34E	6-29 1941	.82E	6-28 1940	1.09	3-4 1963	1.35	3-4 1963	1.92	3-4 1963	2.17	3-3 1963	2.55	3-1 1963	2.66

NOTES: Watershed conditions: First year meadow, of a meadow, meadow, corn, wheat rotation; improved practice. 1/ Rain gage Y102. 2/ Precipitation and runoff records began Nov.1938. 3/ Mean P based on 57-yr. (1909-65) U. S. Weather Bureau record period at Coshocton, Ohio.

NO SUITABLE SELECTED RUNOFF EVENT TO REPORT. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 26.13-4. FOR GEOLOGY DESCRIPTION AND MAP, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1962, USDA MISC. PUB. 1070, P. 26.13-1 AND 26.30-3.

MONTHLY PRECIPITATION AND RUNOFF (inches)						COSHOCTON, OHIO WATERSHED 103 AREA - 0.650 ACRE								26.14	
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967 P 1/ Q	.89 .00	1.64 .00	4.38 .46	2.75 .00	4.98 .02	.86 .00	6.40 .01	1.20 .00	3.53 .00	1.60 .00	3.19 .00	2.61 .00	34.03 .49		
STA AV2/P (39-67)Q	2.62 .32	2.28 .37	3.29 .61	3.36 .29	3.58 .14	4.03 .38	4.14 .26	2.85 .13	2.62 .14	2.07 .03	2.38 .03	2.13 .09	35.35 2.79		
MEAN P 3/ 57 YR	3.25	2.60	3.60	3.74	3.75	4.33	4.16	3.77	3.13	2.56	2.82	2.82	40.53		

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	3-6	.07	3-6	.06	3-6	.10	3-6	.17	3-5	.19	3-5	.21	3-5	.21	3-5	.30

MAXIMUMS FOR PERIOD OF RECORD																
1939 TO	7-23	4.72	9-1	1.95	9-1	2.60	9-1	2.62	3-4	2.82	3-4	3.07	3-3	3.50	3-1	4.15
1967	1940		1950		1950		1950		1963		1963		1963		1963	

NOTES: Watershed conditions: Wheat, of a wheat, meadow, meadow, corn rotation; improved practice. 1/ Rain gage 107.
2/ Precipitation and runoff records began Apr. 1939. 3/ Mean P based on 57-yr. (1909-65) U. S. Weather Bureau record period at Coshocton, Ohio.

NO SUITABLE SELECTED RUNOFF EVENT TO REPORT. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 26.14-5. FOR GEOLOGY DESCRIPTION AND MAP, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1962, USDA MISC. PUB. 1070, P. 26.14-1 AND 26.30-3.

Cooperative Research Project of USDA and Ohio Agricultural Research and Development Center

26.14-1

MONTHLY PRECIPITATION AND RUNOFF (inches)						COSHOCTON, OHIO WATERSHED 110 AREA - 1.27 ACRES								26.15	
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967 P 1/ Q	.89 .00	1.64 .00	4.38 .04	2.75 .00	4.98 .02	.86 .00	6.40 .01	1.20 .00	3.53 .00	1.60 .00	3.19 .00	2.61 .01	34.03 .08		
STA AV2/P (39-67)Q	2.62 .22	2.28 .24	3.29 .39	3.36 .15	3.58 .12	4.03 .35	4.14 .26	2.85 .11	2.62 .14	2.07 .03	2.38 .02	2.13 .09	35.35 2.12		
MEAN P 3/ 57 YR	3.25	2.60	3.60	3.74	3.75	4.33	4.16	3.77	3.13	2.56	2.82	2.82	40.53		

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	7-28	.02	3-6	.01	5-11	.02	3-6	.02	3-6	.02	3-5	.02	3-5	.02	3-5	.02

MAXIMUMS FOR PERIOD OF RECORD																
1939 TO	7-28	4.44	9-1	2.24	9-1	3.16	9-1	3.19	9-1	3.19	9-1	3.20	3-3	4.12	3-1	5.05
1967	1950		1950		1950		1950		1950		1950		1963		1963	

NOTES: Watershed conditions: Wheat, of a wheat, meadow, meadow, corn rotation; prevailing practice. 1/ Rain gage 107.
2/ Precipitation and runoff records began Apr. 1939. 3/ Mean P based on 57-yr. (1909-65) U. S. Weather Bureau record period at Coshocton, Ohio.

NO SUITABLE SELECTED RUNOFF EVENT TO REPORT. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 26.14-5. FOR GEOLOGY DESCRIPTION AND MAP, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1962, USDA MISC. PUB. 1070, P. 26.15-1 AND 26.30-3.

MONTHLY PRECIPITATION AND RUNOFF (inches)							COSHOCOTON, OHIO		WATERSHED 113		26.16					
							AREA - 1.45 ACRES									
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967 P 1/	.85	1.86	5.19	3.29	4.91	1.25	6.54	1.13	3.36	1.61	3.29	2.68	35.96			
Q	.00	.00	.35	.00	T	.02	.71	.00	.04	.00	.09	.03	1.24			
STA AV2/P	2.67	2.37	3.37	3.38	3.79	4.15	4.05	2.93	2.69	2.14	2.45	2.22	36.21			
(39-67) Q	.22	.39	.31	.15	.12	.35	.16	.17	.08	.04	.02	.06	2.07			
MEAN P 2/																
57 YR	3.25	2.60	3.60	3.74	3.75	4.33	4.16	3.77	3.13	2.56	2.82	2.82	40.53			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	7-27	.75	7-19	.22	7-19	.22	7-19	.22	7-19	.22	7-27	.28	3-4	.29	7-19	.39
MAXIMUMS FOR PERIOD OF RECORD																
1939 TO	6-12	3.77	9-1	1.03	4-25	1.20	6-28	1.35	3-4	1.50	3-4	1.70	3-3	2.00	3-1	2.69
1967	1957		1950		1961		1957		1963		1963		1963		1963	
NOTES																
Watershed conditions: Corn, of a corn, wheat, meadow, meadow rotation; improved practice. 1/ Rain gage 109.																
2/ Precipitation and runoff records began Sept. 1939. 3/ Mean P based on 57-yr. (1909-65) U. S. Weather Bureau record period at Coshocton, Ohio.																
NO SUITABLE SELECTED RUNOFF EVENT TO REPORT. FOR MAP OF WATERSHEDS, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 26.16-5. FOR GEOLOGY DESCRIPTION AND MAP, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1962, USDA MISC. PUB. 1070, P. 26.16-1 AND 26.30-3.																
Cooperative Research Project of USDA and Ohio Agricultural Research and Development Center																
26.16-1																

MONTHLY PRECIPITATION AND RUNOFF (inches)							COSHOCOTON, OHIO		WATERSHED 118		26.17					
							AREA - 1.96 ACRES									
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967 P 1/	.90	2.02	4.75	3.22	4.94	1.17	6.59	1.22	3.48	1.58	3.32	2.72	35.91			
Q	.01	.08	1.37	.03	.10	.00	.55	.00	.03	.00	.07	.10	2.34			
STA AV2/P	2.77	2.45	3.48	3.46	3.75	4.10	4.12	2.95	2.80	2.08	2.57	2.28	36.81			
(40-67) Q	.27	.35	.53	.22	.11	.39	.16	.23	.13	.01	.04	.08	2.52			
MEAN P 2/																
57 YR	3.25	2.60	3.60	3.74	3.75	4.33	4.16	3.77	3.13	2.56	2.82	2.82	40.53			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	7-27	.73	7-19	.10	7-19	.10	7-27	.13	3-5	.19	3-5	.34	3-5	.55	3-4	1.07
MAXIMUMS FOR PERIOD OF RECORD																
1940 TO	6-12	3.11	9-1	1.30	9-1	1.59	9-1	1.60	9-1	1.60	3-9	1.90	3-9	2.41	3-4	3.43
1967	1957		1950		1950		1950		1950		1964		1964		1964	
NOTES																
Watershed conditions: Corn, of a corn, wheat, meadow, meadow rotation; prevailing practice. 1/ Rain gage 108.																
2/ Precipitation and runoff began Jan. 1940. 3/ Mean P based on 57-yr. (1909-65) U. S. Weather Bureau record period at Coshocton, Ohio.																
NO SUITABLE SELECTED RUNOFF EVENT TO REPORT. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 26.17-5. FOR GEOLOGY DESCRIPTION AND MAP, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1962, USDA MISC. PUB. 1070, P. 26.17-1 AND 26.30-3.																
Cooperative Research Project of USDA and Ohio Agricultural Research and Development Center																
(See 26.16-1 above)																
26.17-1																

MONTHLY PRECIPITATION AND RUNOFF (inches)							COSHOCTON, OHIO WATERSHED 111 AREA - 1.18 ACRES							26.18	
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967 P 1/	.85	1.86	5.19	3.29	4.91	1.25	6.54	1.13	3.36	1.61	3.29	2.68	35.96		
Q	.00	.00	1.38	.07	.00	.01	.01	.00	T	.00	.17	.96	2.60		
STA AV2/P	2.67	2.37	3.37	3.38	3.79	4.15	4.05	2.93	2.69	2.14	2.45	2.22	36.21		
(39-67)Q	.49	.56	.63	.30	.15	.32	.09	.05	.08	.02	.03	.21	2.93		
MEAN P 3/															
57 YR	3.25	2.60	3.60	3.74	3.75	4.33	4.16	3.77	3.13	2.56	2.82	2.82	40.53		

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	3-5	.14	12-11	.12	12-11	.17	3-5	.32	3-5	.53	3-5	.74	3-4	.80	3-3	.87

MAXIMUMS FOR PERIOD OF RECORD																
1939 TO	6-12	3.83	6-12	1.33	6-12	1.42	6-28	1.71	1-21	2.03	1-26	2.60	1-25	2.61	1-19	3.08
1967	1957		1957		1957		1957		1959		1952		1952		1952	

NOTES: Watershed conditions: Corn, of a corn, wheat, meadow, meadow rotation; improved practice. 1/ Rain gage 109.
2/ Precipitation and runoff records began Sept. 1939. 3/ Mean P based on 57-yr. (1909-65) U. S. Weather Bureau record period at Coshocton, Ohio.

NO SUITABLE SELECTED RUNOFF EVENT TO REPORT. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 26.18-5. FOR GEOLOGY DESCRIPTION AND MAP, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1962, USDA MISC. PUB. 1070, P. 26.18-1 AND 26.30-3.

Cooperative Research Project of USDA and Ohio Agricultural Research and Development Center

26.18-1

MONTHLY PRECIPITATION AND RUNOFF (inches)							COSHOCTON, OHIO WATERSHED 121 AREA - 1.42 ACRES							26.19	
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967 P 1/	.85	1.14	4.11	2.94	4.83	.84	6.61	1.23	3.34	1.57	3.23	2.64	33.33		
Q	.00	.00	.64	.01	.12	.00	.00	.00	.00	.00	.00	.01	.78		
STA AV2/P	2.63	2.23	3.21	3.27	3.63	4.10	4.31	2.87	2.66	2.07	2.35	2.11	35.44		
(39-67)Q	.18	.20	.33	.17	.06	.23	.19	.13	.08	.02	.01	.03	1.63		
MEAN P 3/															
57 YR	3.25	2.60	3.60	3.74	3.75	4.33	4.16	3.77	3.13	2.56	2.82	2.82	40.53		

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	3-5	.11	3-5	.08	3-5	.11	3-5	.16	3-5	.20	3-5	.30	3-5	.31	3-5	.34

MAXIMUMS FOR PERIOD OF RECORD																
1939 TO	8-23	7.82	9-1	1.32	9-1	1.39	9-1	1.39	9-1	1.39	9-1	1.39	3-3	1.66	3-1	1.87
1967	1944		1950		1950		1950		1950		1950		1963		1963	

NOTES: Watershed conditions: Second year meadow, of a meadow, corn, wheat, meadow rotation; improved practice.
1/ Rain gage 113. 2/ Precipitation and runoff records began Apr. 1939. 3/ Mean P based on 57-yr. (1909-65) U. S. Weather Bureau record period at Coshocton, Ohio.

NO SUITABLE SELECTED RUNOFF EVENT TO REPORT. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 26.20-5. FOR GEOLOGY DESCRIPTION AND MAP, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1962, USDA MISC. PUB. 1070, P. 26.19-1 AND 26.30-3.

MONTHLY PRECIPITATION AND RUNOFF (inches)						COSHOCTON, OHIO WATERSHED 185 AREA - 7.40 ACRES								26.23
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1967	P 1	.92	1.28	4.23	2.96	4.65	.96	6.37	1.16	3.16	1.52	3.41	2.72	33.34
	Q	.00	.01	.38	T	.08	.00	.00	.00	.01	.00	.00	.01	.49
	STA AV2/P	2.67	2.26	3.25	3.30	3.69	3.88	4.06	2.91	2.64	2.03	2.36	2.14	35.19
	(39-67)Q	.13	.23	.35	.14	.12	.28	.18	.12	.14	.05	.02	.05	1.81
	MEAN P 37													
57 YR		3.25	2.60	3.60	3.74	3.75	4.33	4.16	3.77	3.13	2.56	2.82	2.82	40.53

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS

YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	5-7	.04	3-6	.02	3-6	.04	3-5	.06	3-5	.10	3-5	.18	3-4	.22	3-3	.26

MAXIMUMS FOR PERIOD OF RECORD

1939 TO	6-16	3.35	9-1	1.91	9-1	2.31	9-1	2.32	3-4	2.42	3-4	2.88	3-3	3.55	3-1	4.11
1967	1946		1950		1950		1950		1963		1963		1963		1963	

NOTES:

Watershed conditions: Second year meadow, and wheat strips, of a corn, wheat, meadow, meadow rotation; improved practice with contour strips. 1/ Rain gage 120. 2/ Precipitation and runoff records began Sept. 1939. 3/ Mean P based on 57-yr. (1909-65) U. S. Weather Bureau record period at Coshocton, Ohio.

NO SUITABLE SELECTED RUNOFF EVENT TO REPORT. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 26.23-5. FOR GEOLOGY DESCRIPTION AND MAP, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1962, USDA MISC. PUB. 1070, P. 26.23-1 AND 26.30-3

Cooperative Research Project of USDA and Ohio Agricultural Research and Development Center

26.23-1

MONTHLY PRECIPITATION AND RUNOFF (inches)						COSHOCTON, OHIO WATERSHED 187 AREA - 7.20 ACRES								26.24
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1967	P 1	.85	1.68	5.08	3.04	5.13	1.43	6.78	1.23	3.48	1.68	3.19	2.68	36.25
	Q	.00	.00	1.72	.00	.08	.00	.03	.00	T	.00	.00	.04	1.37
	STA AV2/P	2.69	2.32	3.35	3.33	3.79	4.07	4.27	2.89	2.84	2.11	2.42	2.17	36.25
	(41-67)Q	.84	.68	1.13	.56	.22	.34	.12	.06	.11	.02	.02	.26	4.35
	MEAN P 37													
57 YR		3.25	2.60	3.60	3.74	3.75	4.33	4.15	3.77	3.13	2.56	2.82	2.82	40.53

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS

YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	3-6	.04	3-6	.04	3-6	.06	3-6	.12	3-5	.18	3-5	.30	3-5	.53	3-5	1.12

MAXIMUMS FOR PERIOD OF RECORD

1941 TO	6-12	2.75	9-1	1.37	9-1	1.54	9-1	1.57	3-4	2.01	3-4	2.15	3-4	2.95	1-20	13.36
1967	1957		1950		1950		1950		1963		1963		1963		1963	

NOTES:

Watershed conditions: Corn, and first year meadow strips, of a corn, wheat, meadow, meadow rotation; improved practice with contour strips. 1/ Rain gage 110. 2/ Precipitation and runoff records began Jan. 1941. 3/ Mean P based on 57-yr. (1909-65) U. S. Weather Bureau record period at Coshocton, Ohio.

NO SUITABLE SELECTED RUNOFF EVENT TO REPORT. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 26.24-5. FOR GEOLOGY DESCRIPTION AND MAP, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1962, USDA MISC. PUB. 1070, P. 26.24-1 AND 26.30-3.

Cooperative Research Project of USDA and Ohio Agricultural Research and Development Center
(See 26.23-1 above)

26.24-1

MONTHLY PRECIPITATION AND RUNOFF (inches)						COSHOCKTON, OHIO		WATERSHED 192		26.25			
						AREA - 7.59 ACRES							
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1967	.92	1.28	4.23	2.96	4.65	.96	5.37	1.16	3.16	1.52	3.41	2.72	33.34
1967	.00	.05	1.38	.01	.20	.00	.01	.00	T	.00	T	.10	1.75
STA AV2/P	2.67	2.26	3.25	3.30	3.69	3.88	4.06	2.91	2.64	2.03	2.36	2.14	35.15
(40-67)	.44	.54	.65	.25	.16	.31	.16	.07	.11	.02	.04	.17	2.92
MEAN													
57 YR	3.25	2.60	3.60	3.74	3.75	4.33	4.16	3.77	3.13	2.56	2.82	2.82	40.53

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	5-7	.11	3-6	.04	3-6	.05	3-20	.12	3-8	.16	3-5	.30	3-5	.40	3-4	.93

MAXIMUMS FOR PERIOD OF RECORD																
1940 TO	6-16	4.60	6-16	1.85	9-1	2.02	9-1	2.04	3-4	2.11	3-4	2.53	3-4	3.85	3-3	4.72
1967	1946		1946		1950		1950		1963		1963		1963		1963	

NOTES: Watershed conditions: Wheat, of a wheat, meadow, meadow, corn rotation; prevailing practice. 1/ Rain gage 128. 2/ Precipitation and runoff records began Sept. 1939. 3/ Mean P based on 57-yr. (1909-65) U. S. Weather Bureau record period at Coshocton, Ohio.

NO SUITABLE SELECTED RUNOFF EVENT TO REPORT. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 26.23-5. FOR GEOLOGY DESCRIPTION AND MAP, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1962, USDA MISC. PUB. 1070, P. 26.25-1 AND 26.30-3.

Cooperative Research Project of USDA and Ohio Agricultural Research and Development Center

26.25-1

MONTHLY PRECIPITATION AND RUNOFF (inches)						COSHOCKTON, OHIO		WATERSHED 172		26.26			
						AREA - 43.6 ACRES							
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1967	.92	1.59	4.37	2.89	4.85	.70	6.28	1.05	3.35	1.58	3.35	2.68	33.61
1967	.09	.35	3.85	1.79	2.98	.15	.11	.05	.04	.06	.09	.39	9.95
STA AV3/P	2.69	2.38	3.35	3.33	3.68	4.00	4.22	2.86	2.58	2.13	2.41	2.17	35.80
(39-67)	1.19	1.49	2.55	2.29	1.47	.77	.28	.10	.12	.11	.22	.53	11.12
MEAN													
57 YR	3.25	2.60	3.60	3.74	3.75	4.33	4.16	3.77	3.13	2.56	2.82	2.82	40.53

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	5-11	.04	5-11	.04	5-11	.06	5-11	.15	3-5	.25	3-5	.48	3-5	.71	5-8	1.46

MAXIMUMS FOR PERIOD OF RECORD																
1939 TO	6-12	2.64E	6-12	1.07E	6-12	1.23E	6-12	1.38E	1-20	1.43	1-26	1.95	1-20	2.34	4-3	3.22
1967	1957		1957		1957		1957		1952		1952		1952		1957	

NOTES: Watershed conditions: Cover of 33% uneven age hardwoods, 67% pines planted in 1939. 1/ Rain gage 103. 2/ Parshall flume for measuring runoff was replaced Jan. 1, 1967 by 16-in. broadcrested concrete weir with 2:1 side slopes, 4 ft. deep. 3/ Precipitation and runoff records began Feb. 1939. 4/ Mean P based on 57-yr. (1909-65) U. S. Weather Bureau record period at Coshocton, Ohio.

NO SUITABLE SELECTED RUNOFF EVENT TO REPORT. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 26.26-5. FOR GEOLOGY DESCRIPTION AND MAP, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1962, USDA MISC. PUB. 1070, P. 26.26-1 AND 26.30-3.

MONTHLY PRECIPITATION AND RUNOFF (inches)							COSHOCKTON, OHIO		WATERSHED 169		20.27						
							AREA - 29.0 ACRES										
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967	P 1/	.85	1.14	4.11	2.94	4.83	.84	6.61	1.23	3.34	1.57	3.23	2.64	33.33			
	Q	.02	.14	2.36	.50	1.07	.01	.21	.00	.04	T	.07	.58	5.00			
STA AV2/P		2.63	2.23	3.21	3.25	3.71	4.00	4.22	2.92	2.72	1.98	2.41	2.13	35.41			
(40-67)P		.85	.96	1.43	.95	.51	.48	.25	.18	.16	.04	.09	.36	0.24			
MEAN	P 3/																
57 YR		3.25	2.60	3.60	3.74	3.75	4.33	4.16	3.77	3.13	2.56	2.82	2.82	46.53			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																	
YEAR	MAXIMUM DISCHARGE	MAXIMUM VOLUME FOR SELECTED TIME INTERVAL															
		1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS			
		DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME		
1967		7-19	.07	3-6	.06	3-6	.09	3-6	.16	3-5	.24	3-5	.45	3-4	.59	3-3	1.17
MAXIMUMS FOR PERIOD OF RECORD																	
1940 TO	6-12	2.59	9-1	1.70	9-1	2.00	9-1	2.03	9-1	2.04	1-21	2.12E	1-21	2.37E	1-20	2.68E	
19 67	1957		1950		1950		1950		1950		1959		1959		1959		
NOTES: Watershed conditions: Cover of 6% hardwoods, 6% reforested, 48% grassland, 34% cultivated, 6% miscellaneous; contour strip cropped. 1/ Rain gage 113. 2/ Precipitation and runoff records began Jan. 1940. 3/ Mean P based on 57-yr. (1909-65) U. S. Weather Bureau record period at Coshocton, Ohio.																	
NO SUITABLE SELECTED RUNOFF EVENT TO REPORT. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 26.27-6. FOR GEOLOGY DESCRIPTION AND MAP, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1962, USDA MISC. PUB. 1070, P. 26.27-1 AND 26.30-3.																	
Cooperative Research Project of USDA and Ohio Agricultural Research and Development Center																	
26.27-1																	

MONTHLY PRECIPITATION AND RUNOFF (inches)							COSHOCKTON, OHIO		WATERSHED 177		26.28						
							AREA - 75.6 ACRES										
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967	P 1/	.92	1.59	4.37	2.89	4.85	.70	6.28	1.05	3.35	1.58	3.35	2.68	33.61			
	Q	.04	.49	3.45	.68	1.49	.01	.15	T	.02	T	.11	.96	7.40			
STA AV2/P		2.69	2.33	3.34	3.32	3.77	3.92	4.15	2.91	2.63	2.02	2.47	2.19	35.74			
(40-67)Q		1.09	1.16	1.81	1.19	.62	.55	.25	.12	.13	.06	.15	.53	7.66			
MEAN	P 3/																
57 YR		3.25	2.60	3.60	3.74	3.75	4.33	4.16	3.77	3.13	2.56	2.82	2.82	40.53			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																	
YEAR	MAXIMUM DISCHARGE	MAXIMUM VOLUME FOR SELECTED TIME INTERVAL															
		1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS			
		DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME		
1967		3-6	.05	3-6	.05	3-6	.08	3-6	.15	3-5	.24	3-5	.46	3-5	.71	3-4	1.46
MAXIMUMS FOR PERIOD OF RECORD																	
19 40 TO	6-12	3.14	6-12	1.33	9-1	1.55	9-1	1.63	3-4	1.77	3-4	2.06	3-4	2.48	3-4	3.22	
19 67	1957		1957		1950		1950		1963		1963		1963		1964		
NOTES: Watershed conditions: Cover of 4% hardwoods, 6% reforested, 67% grassland, 17% cultivated, 6% miscellaneous; contour strip cropped. 1/ Rain gage 103. 2/ Precipitation and runoff records began Jan. 1940. 3/ Mean P based on 57-yr. (1909-65) U. S. Weather Bureau record period at Coshocton, Ohio.																	
NO SUITABLE SELECTED RUNOFF EVENT TO REPORT. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 26.28-7. FOR GEOLOGY DESCRIPTION AND MAP, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1962, USDA MISC. PUB. 1070, P. 26.28-1 AND 26.30-3.																	

MONTHLY PRECIPITATION AND RUNOFF (inches)						COSHOCTON, OHIO WATERSHED 196 AREA - 303 ACRES								26.30		
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	P ₁ /	.88	1.85	4.92	3.13	5.04	1.30	6.68	1.22	3.48	1.63	3.26	2.70	36.09		
	Q	.19	.78	5.23	1.76	2.75	.19	.38	.09	.12	.11	.43	1.52	13.55		
STA	AV2/P	2.70	2.50	3.56	3.47	3.74	4.33	4.26	2.88	2.68	2.17	2.47	2.25	37.01		
(37-67)Q		1.75	1.94	2.95	2.38	1.47	1.09	.57	.29	.24	.21	.40	.95	14.24		
MEAN	P ₃ /															
57 YR		3.25	2.60	3.60	3.74	3.75	4.33	4.16	3.77	3.13	2.56	2.82	2.82	40.53		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	3-6	.07	3-6	.07	3-6	.12	3-6	.25	3-5	.41	3-5	.79	3-5	1.17	3-4	2.20
MAXIMUMS FOR PERIOD OF RECORD																
1937 TO	6-12	3.72	6-12	1.31E	6-12	1.44E	5-16	1.63	1-21	2.06	1-21	2.92	1-20	3.21	3-4	4.63
1967	1957		1957		1957		1946		1959		1959		1959		1964	
NOTES: Watershed conditions: Cover of 27% woodland, 50% grassland, 19% cultivated, 4% miscellaneous; prevailing practice. 1/ Arithmetic average rain gages 108 and 116. 2/ Precipitation and runoff records began May 1937. 3/ Mean P based on 57-yr. (1909-65) U. S. Weather Bureau record period at Coshocton, Ohio.																
NO SUITABLE SELECTED RUNOFF EVENT TO REPORT. FOR MAP OF WATERSHED SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 26.30-5. FOR GEOLOGY DESCRIPTION AND MAP, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1962, USDA MISC. PUB. 1070, P. 26.30-1 AND 26.30-3.																
Cooperative Research Project of USDA and Ohio Agricultural Research and Development Center																
26.30-1																

MONTHLY PRECIPITATION AND RUNOFF (inches)						COSHOCTON, OHIO WATERSHED 10 AREA - 122 ACRES								26.31		
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	P ₁ /	.93	1.85	4.70	3.05	4.65	.97	6.81	1.59	3.29	1.59	3.54	2.92	35.89		
	Q	.07	.35	2.95	.94	1.47	.16	.24	.09	.09	.10	.31	1.08	7.85		
STA	AV2/P	2.79	2.55	3.48	3.50	3.51	4.07	4.22	2.89	2.56	2.19	2.53	2.34	36.73		
(39-67)Q		1.15	1.36	1.90	1.55	.88	.68	.35	.16	.12	.15	.24	.62	9.16		
MEAN	P ₃ /															
57 YR		3.25	2.60	3.60	3.74	3.75	4.33	4.16	3.77	3.13	2.56	2.82	2.82	40.53		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	3-6	.04	3-6	.04	3-6	.07	3-6	.15	3-20	.24	3-5	.44	3-5	.68	3-4	1.19
MAXIMUMS FOR PERIOD OF RECORD																
1939 TO	6-28	1.76E	6-28	.98E	6-28	1.39E	5-28	1.80E	6-28	1.99E	6-28	2.14E	6-28	2.25E	3-1	2.94E
1967	1957		1957		1957		1957		1957		1957		1957		1963	
NOTES: Watershed conditions: Cover of 21% cropland, 48% grassland, 25% woodland, 6% miscellaneous; improved practice. 1/ Rain gage 27. 2/ Precipitation and runoff records began Jan. 1939. 3/ Mean P based on 57-yr. (1909-65) U. S. Weather Bureau record period at Coshocton, Ohio.																
NO SUITABLE SELECTED RUNOFF EVENT TO REPORT. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 26.31-4. FOR GEOLOGY DESCRIPTION AND MAP, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1962, USDA MISC. PUB. 1070, P. 26.31-1 AND 26.37-2.																

MONTHLY PRECIPITATION AND RUNOFF (inches)

COSHOCTON, OHIO

WATERSHED 5

-32

AREA - 349 ACRES

MONTH		YEAR												
YEAR		JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1967	P 1	.91	2.01	4.77	3.04	4.76	1.09	6.55	1.97	3.61	1.42	3.62	2.80	36.55
	Q	.14	.52	3.14	1.28	1.87	.11	.25	.11	.11	.09	.47	1.04	9.13
STA AV2/P		2.79	2.50	3.47	3.48	3.68	3.97	4.21	2.94	2.64	2.15	2.61	2.36	36.80
(40-67)Q		1.39	1.49	2.26	1.80	1.12	.77	.43	.20	.12	.18	.32	.72	10.80
MEAN	P 3													
57 VR		3.25	2.60	3.60	3.74	3.75	4.33	4.16	3.77	3.13	2.56	2.82	2.82	40.53

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS

YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	7-19	.05	3-6	.04	3-6	.07	3-6	.14	3-5	.22	3-5	.43	3-5	.66	3-4	1.28

MAXIMUMS FOR PERIOD OF RECORD

1940 TO	6-28	1.09	6-28	.77	6-28	1.04	6-28	1.38	4/	1.58	1-21	2.31	1-20	2.64	1-20	3.04
1967	1957		1957		1957		1957				1959		1959		1959	

NOTES

Watershed conditions: Cover of 20% cropland, 54% grassland, 23% woodland, 3% miscellaneous; improved practice.
 Rain gage 91. 2/ Precipitation and runoff records began Jan. 1940. 3/ Mean P based on 57-yr. (1909-65) U. S.
 Weather Bureau record period at Coshocton, Ohio. 4/ June 28, 1957, and Mar. 4, 1963.

NO SUITABLE SELECTED RUNOFF EVENT TO REPORT. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1962, USDA MISC. PUB. 1070, P. 26.32-5 (REVISED). FOR GEOLOGY DESCRIPTION AND MAP, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1962, USDA MISC. PUB. 1070, P. 26.32-1 AND 26.37-2.

Cooperative Research Project of USDA and Ohio Agricultural Research and Development Center

26.32-1

MONTHLY PRECIPITATION AND RUNOFF (inches)

COSHOCTON, OHIO

WATERSHED 92

26-33

AREA - 920 ACRES (1.44 SQ. MILES)

MONTH		YEAR												
YEAR		JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1967	PI	.91	2.01	4.77	3.04	4.76	1.09	6.55	1.97	3.61	1.42	3.62	2.80	36.55
	O	.13	.60	3.80	1.37	2.15	.11	.24	.06	.08	.06	.41	1.23	10.24
STA	AV2/P	2.77	2.56	3.48	3.49	3.60	4.03	4.25	2.91	2.58	2.22	2.54	2.33	36.76
(39-67)	Q	1.50	1.70	2.47	1.97	1.16	.83	.42	.18	.12	.19	.37	.82	11.73
MEAN	P													
57 YR	P	3.25	2.60	3.60	3.74	3.75	4.33	4.16	3.77	3.13	2.56	2.82	2.82	40.53

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS

YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	3-6	.05	3-6	.04	3-6	.08	3-6	.18	3-5	.29	3-5	.56	3-5	.86	3-4	1.64

MAXIMUMS FOR PERIOD OF RECORD

1939	6-28	.62	6-28	.52	6-28	.82	6-28	1.24	<u>4</u> /	1.60	1-21	2.41	<u>4</u> /	2.71	3-4	3.96
1967	1957		1957		1957		1957				1959				1959	

NOTES:

Watershed conditions: Cover of 16% cropland, 59% grassland, 21% woodland, 4% miscellaneous; improved practice. Rain gauge 91. 2/ Precipitation and runoff records began Jan. 1939. 3/ Mean P based on 57-yr. (1909-65) U. S. Weather Bureau record period at Coshocton, Ohio. 4/ Jan. 21, 1959, and Mar. 4, 1963.

NO SUITABLE SELECTED RUNOFF EVENT TO REPORT. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1962, USDA MISC. PUB. 1070, P. 26.32-5 (REVISED). FOR GEOLOGY DESCRIPTION AND MAP, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1962, USDA MISC. PUB. 1070, P. 26.33-1 AND 26.37-2.

MONTHLY PRECIPITATION AND RUNOFF (inches)							COSHOCOTON, OHIO WATERSHED 94 AREA - 1,520 ACRES (2.37 SQ. MILES)							26.34	
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL	
1967	P ^{1/} _Q	.92	1.93	4.74	3.04	4.70	1.03	6.68	1.78	3.45	1.50	3.58	2.86	36.21	
		.16	.57	3.79	1.43	2.25	.16	.29	.09	.09	.09	.41	1.25	10.58	
STA AV ^{2/} _P		2.77	2.56	3.48	3.49	3.60	4.03	4.26	2.91	2.58	2.21	2.53	2.33	36.75	
(39-67) _Q		1.51	1.68	2.49	1.96	1.18	.88	.45	.21	.14	.20	.35	.79	11.84	
MEAN	P ^{3/}														
57 YR		3.25	2.60	3.60	3.74	3.75	4.33	4.16	3.77	3.13	2.56	2.82	2.82	40.53	

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	3-6	.05	3-6	.05	3-6	.08	3-6	.18	3-5	.27	3-5	.52	3-5	.81	3-4	1.59

MAXIMUMS FOR PERIOD OF RECORD																
1939 to	6-28	.92	6-28	.77	6-28	1.22	6-28	1.79	3-4	2.14	1-21	2.95	1-20	3.27	3-4	3.95
1967	1957		1957		1957		1957		1963		1959		1959		1963	

NOTES: Watershed conditions: Cover of 15% cropland, 57% grassland, 24% woodland, 4% miscellaneous; improved practice.
1/ Arithmetic average rain gages 27 and 91. 2/ Precipitation and runoff records began Jan. 1939. 3/ Mean P based on 57-yr. (1909-65) U. S. Weather Bureau record period at Coshocoton, Ohio.

NO SUITABLE SELECTED RUNOFF EVENT TO REPORT. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 26.34-5. FOR GEOLOGY DESCRIPTION AND MAP, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1962, USDA MISC. PUB. 1070, P. 26.34-1 AND 26.37-2.

Cooperative Research Project of USDA and Ohio Agricultural Research and Development Center

26.34-1

MONTHLY PRECIPITATION AND RUNOFF (inches)							COSHOCOTON, OHIO WATERSHED 95 AREA - 2,570 (4.02 SQ. MILES)							26.35	
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL	
1967	P ^{1/} _Q	.92	1.93	4.74	3.04	4.70	1.03	6.68	1.78	3.45	1.50	3.58	2.86	36.21	
		.16	.58	3.79	1.37	2.12	.14	.27	.07	.07	.07	.39	1.25	10.28	
STA AV ^{2/} _P		2.79	2.56	3.48	3.50	3.61	4.07	4.21	2.89	2.56	2.20	2.54	2.33	36.74	
(39-67) _Q		1.48	1.67	2.50	1.98	1.16	.83	.42	.19	.13	.19	.35	.79	11.69	
MEAN	P ^{3/}														
57 YR		3.25	2.60	3.60	3.74	3.75	4.33	4.16	3.77	3.13	2.56	2.82	2.82	40.53	

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	3-6	.04	3-6	.04	3-6	.07	3-6	.17	3-6	.26	3-5	.52	3-5	.78	3-5	1.56

MAXIMUMS FOR PERIOD OF RECORD																
1939 to	6-28	.61	6-28	.56	6-28	.95	3-4	1.58	3-4	2.32	3-4	2.78	3-4	3.49	3-2	4.24
1967	1957		1957		1957		1963		1963		1963		1963		1963	

NOTES: Watershed conditions: Cover of 15% cropland, 55% grassland, 26% woodland, 4% miscellaneous; improved practice.
1/ Arithmetic average rain gages 27 and 91. 2/ Precipitation and runoff records began Jan. 1939. 3/ Mean P based on 57-yr. (1909-65) U. S. Weather Bureau record period at Coshocoton, Ohio.

NO SUITABLE SELECTED RUNOFF EVENT TO REPORT. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 26.34-5. FOR GEOLOGY DESCRIPTION AND MAP, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1962, USDA MISC. PUB. 1070, P. 26.35-1 AND 26.37-2.

MONTHLY PRECIPITATION AND RUNOFF (inches)						COSHOCKTON, OHIO WATERSHED 97 AREA - 4,580 ACRES (7.16 SQ. MILES)								26.36
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1967	P 1/ Q 2/	.89 .15	1.83 .55	4.79 3.52	2.95 1.17	4.73 2.00	.88 .13	6.97 .25	1.45 .06	3.40 .06	1.59 .07	3.42 .37	2.74 1.13	35.64 9.46
	STA AV2/P	2.97	2.49	3.49	3.52	3.67	4.18	4.24	2.84	2.52	2.19	2.48	2.32	36.91
	(37-67)P	1.74	1.64	2.47	2.03	1.18	.92	.47	.21	.13	.17	.34	.82	12.12
	MEAN P 3/													
57 YR		3.25	2.60	3.60	3.74	3.75	4.33	4.16	3.77	3.13	2.56	2.82	2.82	40.53

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS

YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	3-6	.04	3-6	.04	3-6	.07	3-6	.17	3-5	.26	3-5	.51	3-5	.79	3-4	1.52

MAXIMUMS FOR PERIOD OF RECORD

1937 TO 1967	6-28 1957	.72	6-28 1957	.66	6-28 1957	1.15	1-24 1937	1.89	1-21 1959	2.32	1-21 1959	3.24	1-20 1959	3.54	1-18 1937	6.77
--------------	-----------	-----	-----------	-----	-----------	------	-----------	------	-----------	------	-----------	------	-----------	------	-----------	------

NOTES

Watershed conditions: Cover of 18% cropland, 50% grassland, 28% woodland, 4% miscellaneous; improved practice. 1/ Arithmetic average rain gages 27, 54, 56, and 91. 2/ Precipitation and runoff records began Jan. 1937. 3/ Mean P based on 57-yr. (1909-65) U. S. Weather Bureau record period at Coshocton, Ohio.

NO SUITABLE SELECTED RUNOFF EVENT TO REPORT. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 26.34-5. FOR GEOLOGY DESCRIPTION AND MAP, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1962, USDA MISC. PUB. 1070, P. 26.36-1 AND 26.37-2.

Cooperative Research Project of USDA and Ohio Agricultural Research and Development Center

26.36-1

MONTHLY PRECIPITATION AND RUNOFF (inches)						COSHOCKTON, OHIO WATERSHED 99A AREA - 17,400 ACRES (27.2 SQ. MILES)								26.37
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1967	P 1/ Q 2/	.92 .19	1.80 .70	4.80 4.40	2.94 1.47	4.71 2.38	.88 .20	6.40 .22	1.75 .09	3.58 .10	1.60 .11	3.43 .52	2.69 1.57	35.50 11.95
	STA AV3/P	2.97	2.50	3.49	3.51	3.66	4.18	4.24	2.85	2.52	2.24	2.49	2.34	36.99
	(36-67)P	1.89	1.87	2.63	2.14	1.30	.97	.55	.25	.15	.22	.42	.89	13.28
	MEAN P 4/													
57 YR		3.25	2.60	3.60	3.74	3.75	4.33	4.16	3.77	3.13	2.56	2.82	2.82	40.53

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS

YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	3-6	.04	3-6	.04	3-6	.07	3-6	.20	3-6	.35	3-5	.69	3-5	1.10	3-5	1.88

MAXIMUMS FOR PERIOD OF RECORD

1936 TO 1967	6-28 1957	.44	6-28 1957	.43	6-28 1957	.81	6-28 1957	1.71	6-28 1957	2.16	1-21 1959	3.06	1-21 1959	3.45	3-4 1964	4.79
--------------	-----------	-----	-----------	-----	-----------	-----	-----------	------	-----------	------	-----------	------	-----------	------	----------	------

NOTES

Watershed conditions: Cover of 15% cropland, 55% grassland, 26% woodland, 4% miscellaneous; generally under improved practice. 1/ Arithmetic average rain gages 27, 54, 56, 91, MC4, and MC6. 2/ Runoff data furnished by U. S. Geological Survey, New Philadelphia, Ohio. 3/ Precipitation and runoff records began Oct. 1936. 4/ Mean P based on 57-yr. (1909-65) U. S. Weather Bureau record period at Coshocton, Ohio.

NO SUITABLE SELECTED RUNOFF EVENT TO REPORT. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 26.37-5. FOR GEOLOGY DESCRIPTION AND MAP, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1962, USDA MISC. PUB. 1070, P. 26.37-1 AND 26.37-2.

Cooperative Research Project of USDA, U.S. Geological Survey, and Ohio Agricultural Research and Development Center
(See 26.36-1 above)
26.37-1

MONTHLY PRECIPITATION AND RUNOFF (inches)						COSHOCTON, OHIO		WATERSHED 174 AREA - 52.8 ACRES		26.38						
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	P 1/2	.89	1.64	4.38	2.75	4.98	.86	6.40	1.20	3.53	1.60	3.19	2.61	34.03		
	O	.07	.53	3.80	.92	1.71	.03	.35	.15	.08	.08	.28	1.18	9.18		
STA AV2/P		2.16	2.55	3.92	3.66	2.80	2.72	3.43	2.91	2.49	1.61	2.53	2.14	32.92		
(60-67)%		.59	1.19	2.71	1.63	.54	.31	.10	.10	.06	.08	.16	.36	7.83		
MEAN P 3/4																
57 YR		3.25	2.60	3.60	3.74	3.75	4.33	4.16	3.77	3.13	2.56	2.82	2.82	40.53		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	3-6	.07	3-6	.07	5-11	.12	3-6	.22	3-5	.37	3-5	.68	3-4	.94	3-3	1.70
MAXIMUMS FOR PERIOD OF RECORD																
1961 TO 1967	4-25 1961	1.03	4-25 1961	.82	4-25 1961	1.11	4-25 1961	1.33	3-4 1963	1.61	3-9 1964	1.99	3-9 1964	2.54	3-4 1964	3.71
Notes: Watershed conditions: Cover of 15% hardwoods, 2% reforested, 67% grassland, 16% miscellaneous; prevailing practice on 86% of area. 1/ Rain gage 107. 2/ Precipitation and runoff records began June 1960. 3/ Mean P based on 57-yr. (1909-65) U.S. Weather Bureau record period at Coshocton, Ohio.																
NO SUITABLE SELECTED RUNOFF EVENT TO REPORT. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USDA MISC. PUB. 994, P. 26.30-4. FOR GEOLOGY DESCRIPTION AND MAP, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1962, USDA MISC. PUB. 1070, P. 26.38-1 AND 26.30-3.																
Cooperative Research Project of USDA and Ohio Agricultural Research and Development Center																
26.38-1																

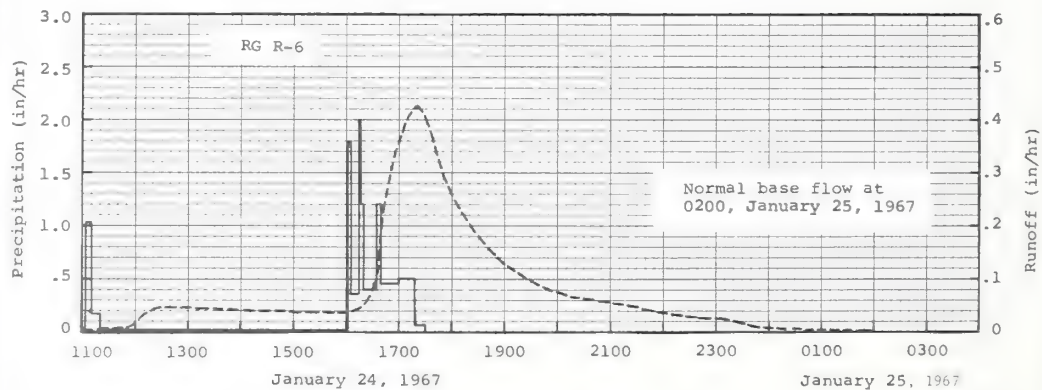
MONTHLY PRECIPITATION AND RUNOFF (inches)						COSHOCTON, OHIO		WATERSHED 194 AREA - 187 ACRES		26.39						
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	P 1/2	.89	1.64	4.38	2.75	4.98	.86	6.40	1.20	3.53	1.60	3.19	2.61	34.03		
	O	.27	1.00	4.64	1.62	2.55	.21	.36	.10	.13	.11	.56	1.65	13.20		
STA AV2/P		2.25	2.63	3.55	3.39	2.82	2.72	3.43	2.91	2.49	1.61	2.53	2.14	32.47		
(60-67)%		1.12	1.69	3.61	2.34	1.21	.57	.20	.13	.11	.16	.29	.59	12.02		
MEAN P 3/4																
57 YR		3.25	2.60	3.60	3.74	3.75	4.33	4.16	3.77	3.13	2.56	2.82	2.82	40.53		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	3-6	.06	3-6	.06	5-11	.10	3-6	.20	3-5	.33	3-5	.62	3-5	.92	3-4	1.85
MAXIMUMS FOR PERIOD OF RECORD																
1960 TO 1967	4-25 1961	.87	4-25 1961	.68	4-25 1961	.93	4-25 1961	1.12	3-9 1964	1.32	3-9 1964	1.91	3-9 1964	2.60	3-4 1964	3.89
Notes: Watershed conditions: Cover of 21% hardwoods, 2% reforested, 58% grassland, 11% cultivated, 8% miscellaneous; prevailing practice. 1/ Rain gage 107. 2/ Precipitation and runoff records began Jan. 1960. 3/ Mean P based on 57-yr. (1909-65) U. S. Weather Bureau record period at Coshocton, Ohio.																
NO SUITABLE SELECTED RUNOFF EVENT TO REPORT. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USDA MISC. PUB. 994, P. 26.30-4. FOR GEOLOGY DESCRIPTION AND MAP, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1962, USDA MISC. PUB. 1070, P. 26.39-1 AND 26.30-3.																

MONTHLY PRECIPITATION AND RUNOFF (inches)						COSHOCOTON, OHIO WATERSHED 182 AREA - 59.6 ACRES								26.40		
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	P 1/	.84	1.67	4.76	3.08	5.14	1.33	6.91	1.24	3.50	1.50	3.48	2.79	36.24		
	Q	.10	.58	4.23	1.49	2.07	.11	.30	.02	.03	.06	.25	1.29	10.53		
	STA AV2/P	2.41	2.48	4.01	3.93	3.04	1.94	3.81	2.84	3.07	1.60	2.80	2.54	34.47		
	(64-67)Q	.72	1.32	3.10	1.94	1.14	.09	.09	.02	.02	.08	.12	.62	9.20		
	MEAN P 3/															
57 YR		3.25	2.60	3.60	3.74	3.75	4.33	4.16	3.77	3.13	2.56	2.82	2.82	40.53		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	3-6	.06	3-6	.05	3-6	.09	3-6	.19	3-5	.30	3-5	.58	3-5	.86	3-4	1.70
MAXIMUMS FOR PERIOD OF RECORD																
1964 TO	3-10	.20	3-10	.17	3-10	.32	3-9	.85	3-9	1.35	3-9	1.98	3-9	2.64	3-4	3.96
1967	1964		1964		1964		1964		1964		1964		1964		1964	
NOTES: Watershed conditions: Mixed cover. 3% woods, 9% pastured woodland, 5% reforested, 49% grassland, 34% cultivated. Prevailing practice except for 10% of area which was strip cropped. 1/ Rain gage 119. 2/ Precipitation and runoff records began Jan. 1964. 3/ Mean P based on 57-yr. (1909-65) U. S. Weather Bureau record period at Coshocton, Ohio.																
NO SUITABLE SELECTED RUNOFF EVENT TO REPORT. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1966, USDA MISC. PUB. 1226, P. 26.40-2.																

1967 DAILY PRECIPITATION (inches)						FENNIMORE, WISCONSIN WATERSHED W-1 31.01						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.00	.14	.00	.04	.00	.00	.27	.00	.00	.00	1.22	.02
2	.00	.00	.00	.27	.00	.00	.00	.40	.00	.00	.11	.02
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.10	.00	.00	.00	.00	.00	.00	.00	.00	.02	.00	.00
5	.00	.23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.40	.00	.00	.00	.00	.00	.00	.51	.00	.00	.00	.04
7	.00	.00	.00	.00	.42	.90	.00	.00	.00	1.47	.00	.94
8	.00	.00	.00	.06	.00	.00	.00	.35	.00	.35	.00	.00
9	.00	.00	.00	.00	.00	.06	.05	.00	.00	.07	.00	.00
10	.00	.00	.00	.00	1.88	1.15	.00	.00	.00	.00	.00	.05
11	.00	.00	.00	.00	.16	.43	.00	.00	.00	.00	.03	.00
12	.00	.06	.00	.09	.00	.00	.00	.00	.00	.00	.00	.02
13	.00	.00	.00	.51	.00	.00	.00	.00	1.18	.33	.00	.00
14	.00	.00	.00	.19	.00	.00	.00	.00	1.12	.00	.00	.00
15	.00	.10	.05	.00	.00	.00	.00	.00	1.40	.00	.00	.00
16	.14	.00	.00	.06	.00	.00	.00	.00	.06	.00	.02	.01
17	.00	.00	.00	.00	.00	.15	.00	1.31	.00	.00	.00	.12
18	.00	.07	.00	.00	.07	.00	.00	.00	.00	.00	.00	.12
19	.00	.00	.30	.00	.00	.05	.00	.00	.00	.00	.00	.00
20	.00	.00	.58	.15	.00	.00	.00	.00	.12	.00	.06	.15
21	.00	.00	.00	.07	.00	.00	.00	.00	.00	.00	.00	.02
22	.00	.00	.01	.00	.00	.00	.00	.40	.00	.00	.00	.00
23	.00	.03	.01	.00	.08	.00	.04	.00	.00	.00	.00	.00
24	1.01	.00	.05	.00	.00	.86	.00	.00	.00	1.05	.00	.00
25	.00	.00	.00	.18	.00	.00	.00	.00	.00	.00	.21	.00
26	.00	.00	.81	.25	.00	.00	.09	.10	.15	.00	.04	.00
27	.00	.04	.00	.00	.00	.09	.00	.02	.00	.05	.00	.00
28	.00	.00	.05	.00	.65	.12	.00	.00	.00	.00	.00	.00
29	.03	.00	.00	.02	.00	.00	.00	.05	.00	.77	.00	.00
30	.00	.00	.00	.17	.00	.00	.00	.00	.00	.53	.00	.00
31	.07	-----	.20	-----	.00	.00	.00	.00	-----	.00	.00	.00
TOTAL	1.75	.67	2.06	2.06	3.26	3.81	.45	3.14	4.03	4.65	1.69	1.52
STA AV	.91	.90	1.87	3.02	3.64	4.78	4.15	3.91	3.59	2.25	2.00	1.09
NOTES: PRECIPITATION VALUES ARE TAKEN FROM RAIN GAGE R-6. STA AV IS 29-YR AVERAGE (1939-67).												
1967 MEAN DAILY DISCHARGE (cfs)						FENNIMORE, WISCONSIN WATERSHED W-1 31.01						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.015	.022	.029	.118	.049	.033	.046	.010	.006	.013	.207	.010
2	.015	.022	.917	.133	.037	.037	.033	.010	.006	.010	.089	.010
3	.015	.022	.722	.078	.037	.037	.029	.010	.006	.010	.037	.010
4	.015	1.750	.226	.074	.037	.037	.029	.010	.006	.010	.037	.013
5	.015	.031	.074	.074	.037	.037	.025	.010	.006	.010	.037	.018
6	.015	.022	.050	.074	.037	.037	.022	.033	.006	.010	.037	.022
7	.058	.022	.141	.067	.098	.110	.022	.033	.006	.097	.037	.173
8	.025	.022	.151	.060	.054	.049	.022	.049	.006	.186	.033	.037
9	.018	.019	1.617	.054	.037	.043	.022	.025	.006	.022	.025	.029
10	.015	.010	4.042	.049	.263	.243	.018	.022	.006	.022	.022	.029
11	.015	.010	1.123	.049	.190	.097	.015	.022	.006	.022	.022	.029
12	.015	.010	.218	.058	.067	.054	.015	.022	.006	.022	.022	.025
13	.444	.010	.076	.112	.054	.049	.015	.022	.136	.044	.022	.022
14	.015	1.169	.078	.085	.043	.043	.015	.022	.194	.029	.022	.022
15	.015	.717	.069	.037	.033	.037	.015	.022	.372	.112	.022	.018
16	.015	.043	.060	.043	.029	.037	.015	.022	.039	.043	.018	.015
17	.015	.022	.086	.049	.029	.047	.015	.240	.025	.015	.015	.015
18	.015	.022	.080	.049	.033	.033	.015	.022	.017	.015	.015	.015
19	.015	.022	.062	.049	.037	.029	.015	.022	.010	.013	.015	.015
20	7.311	.022	.060	.058	.037	.029	.015	.022	.017	.010	.015	.015
21	8.295	.022	.054	.057	.037	.029	.013	.018	.018	.010	.015	.007
22	1.378	.022	.090	.046	.037	.029	.010	.051	.015	.010	.015	.015
23	10.910	.022	.183	.037	.037	.029	.010	.031	.015	.008	.015	.015
24	15.580	.022	8.503	.037	.033	.194	.010	.022	.015	.094	.015	.015
25	.294	.022	.207	.043	.029	.043	.010	.018	.015	.026	.018	.015
26	.037	.022	.290	.082	.029	.037	.010	.015	.015	.022	.018	.015
27	.033	.025	.118	.060	.029	.037	.010	.015	.015	.022	.013	.015
28	.029	.029	.103	.054	.061	.037	.010	.013	.015	.022	.010	.015
29	.025	-----	.103	.049	.047	.037	.010	.010	.015	.062	.010	.015
30	.022	-----	.103	.051	.033	.033	.010	.008	.015	.140	.010	.015
31	.022	-----	.150	-----	.029	.010	.010	.006	-----	.054	-----	-----
MEAN	1.44	.149	.635	.063	.054	.054	.017	.029	.034	.038	.030	.023
INCHES	3.23	.301	1.43	.135	.119	.118	.038	.064	.075	.078	.065	.050
NOTES: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .07213. RECORDS ARE EXCELLENT. SOME PERIODS IN WINTER PARTIALLY ESTIMATED BECAUSE OF ICE BETWEEN STILLING WELL AND WEIR.												

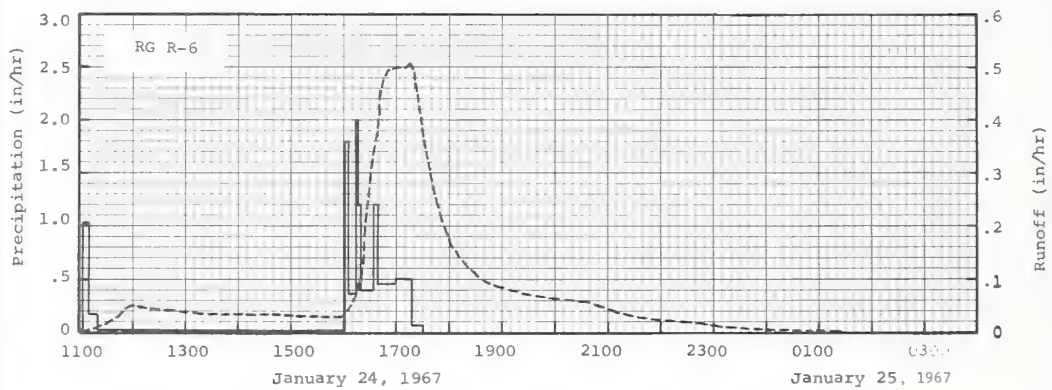
1967 SELECTED RUNOFF EVENT			FENNIMORE, WISCONSIN WATERSHED W-1 31.01							
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)
Event of January 24-25, 1967										
1-24	.00	1/.0256	1-24	RG	R-6		1-24	1100	.0024	.0000
				1103	.00	.00		1155	.0074	.0042
				1110	1.03	.12		1215	.0349	.0111
				1120	.18	.15		1227	.0436	.0190
				1602	.01	.21		1300	.0463	.0437
				1605	1.80	.30				
				1615	.36	.36		1333	.0424	.0683
				1618	2.00	.46		1415	.0385	.0966
				1620	1.20	.50		1505	.0358	.1272
				1635	.40	.60		1600	.0340	.1592
				1640	1.20	.70		1617	.0412	.1696
				1700	.45	.85		1630	.0746	.1814
				1718	.50	1.00		1635	.1073	.1889
				1730	.05	1.01		1640	.1837	.2011
								1645	.2459	.2190
								1650	.2859	.2411
								1655	.3307	.2668
								1700	.3517	.2953
								1710	.4028	.3581
								1720	.4269	.4273
								1730	.4058	.4967
								1740	.3608	.5606
								1750	.3036	.6159
								1800	.2591	.6628
								1820	.2002	.7390
								1840	.1602	.7988
								1900	.1281	.8459
								1920	.1037	.8844
								2000	.0731	.9423
								2100	.0559	1.0066
								2200	.0358	1.0515
								2250	.0272	1.0778
								2310	.0242	1.0864
								2345	.0091	1.0960
								2400	.0074	1.0980
							1-25	0100	.0033	1.1034
								0200	.0017	1.1059

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 332.75. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 31.1-5. FOR 30-DAY ANTECEDENT P AND Q SEE TABLES ON P. 31.1-2. 1/ RUNOFF PRIOR TO 1100 ON 1-24-67.



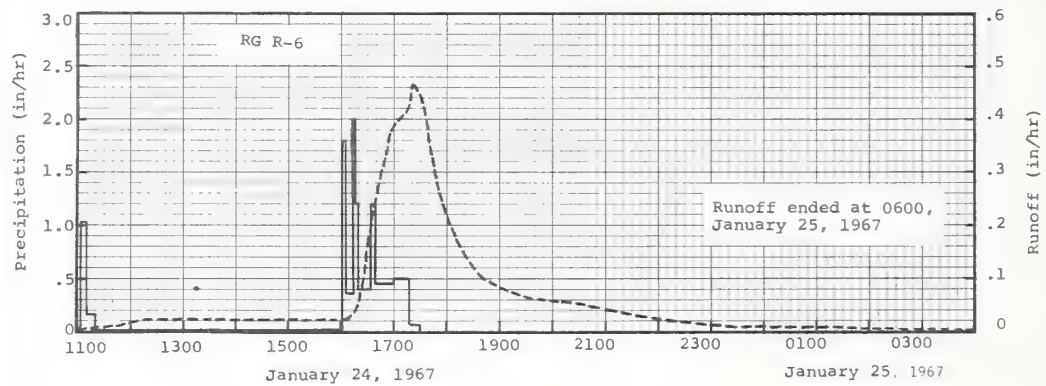
FENNIMORE, WISCONSIN WATERSHED W-1

MONTHLY PRECIPITATION AND RUNOFF (inches)						FENNIMORE, WISCONSIN WATERSHED W-2 31.02 AREA-22.8 ACRES										
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967 P 1/	2/1.75	2/ .67	2/2.06	2.06	3.26	3.81	.45	3.14	4.03	4.65	1.69	1.52	29.09			
Q	2.67	.00	1.32	.00	.00	.00	.00	.00	.00	.00	.00	.00	3.99			
STA AV 3/ P	.91	.90	1.87	3.02	3.64	4.78	4.15	3.91	3.59	2.25	2.00	1.09	32.11			
(38-67) Q	.25	.36	.74	.05	.01	.12	.13	.08	.03	.00	.00	.00	1.77			
MEAN P 4/ 77 YR	1.13	1.12	2.03	2.98	3.95	4.38	3.76	3.51	3.83	2.35	1.98	1.30	32.32			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	1-24	.51	1-24	.41	1-24	.64	1-24	.88	1-24	1.13	1-24	1.20	1-22	1.62	1-22	1.81
MAXIMUMS FOR PERIOD OF RECORD																
1938 to 1967	6-28 1945	2.68	8- 6 1951	1.39	8- 6 1951	1.72	7-15 1950	2.25	7-15 1950	2.26	7-15 1950	2.26	7-15 1950	2.26	3-24 1959	3.77
Notes: Watershed conditions: 77% pasture; 23% idle. 1/ Precipitation is from rain gage R-6. 2/ Snow on ground measurements: Jan. 17-1.54 in.; Feb. 4-.66 in.; Feb. 14-.96 in.; Feb. 21-1.08 in.; Mr. 1-1.12 in.; Mar. 20-.99 in. 3/ Average includes part-year amounts of 1938 for July-Dec. 4/ Mean P based on 77-yr. (1891-1967) U.S. Weather Bureau record period at Lancaster, Wis.																
1967 SELECTED RUNOFF EVENT						FENNIMORE, WISCONSIN WATERSHED W-2 31.02										
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
Event of January 24-25, 1967																
1-24	.00	1/.0220	1-24	RG	R-6		1-24	1100	.0062	.0000						
				1103	.00	.00		1127	.0115	.0043						
				1110	1.03	.12		1145	.0286	.0101						
				1120	.18	.15		1152	.0453	.0144						
				1602	.01	.21		1200	.0507	.0208						
				1605	1.80	.30		1210	.0479	.0290						
				1615	.36	.36		1240	.0418	.0510						
				1618	2.00	.46		1335	.0348	.0864						
				1620	1.20	.50		1510	.0289	.1365						
				1635	.40	.60		1600	.0278	.1601						
				1640	1.20	.70		1605	.0358	.1628						
				1700	.45	.85		1620	.0962	.1771						
				1718	.50	1.00		1625	.1596	.1877						
				1730	.05	1.01		1630	.2710	.2057						
								1635	.3280	.2306						
								1640	.3836	.2603						
								1645	.4684	.2958						
								1650	.4985	.3361						
								1710	.4995	.5024						
								1718	.5093	.5697						
								1725	.4513	.6257						
								1730	.3842	.6605						
								1740	.2962	.7172						
								1750	.2310	.7612						
								1800	.1825	.7956						
								1815	.1368	.8355						
								1845	.0961	.8925						
								1925	.0726	.9470						
								1950	.0639	.9754						
								2035	.0575	1.0209						
								2100	.0454	1.0423						
								2200	.0235	1.0762						
								2300	.0125	1.0984						
								2400	.0049	1.1016						
							1-25	0040	.0016	1.1039						
								0125	.0000	1.1043						
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 22.990. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 31.1-5. 1/ RUNOFF PRIOR TO 1100 ON 1-24-67.																



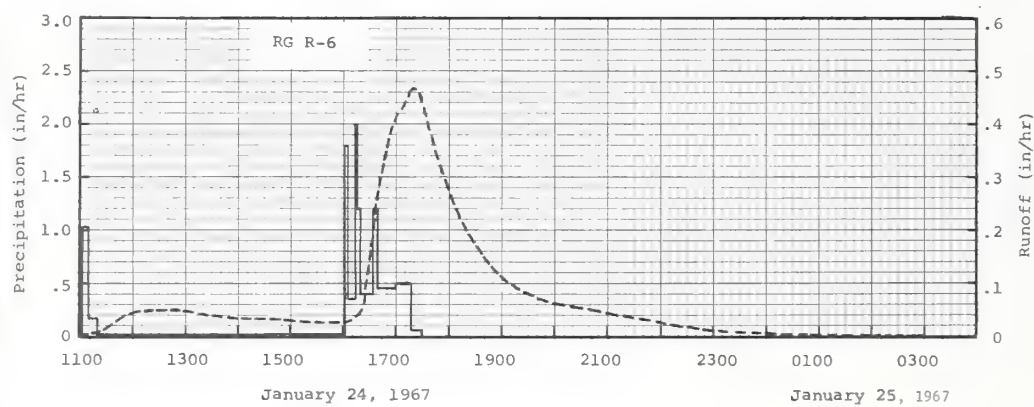
FENNINGTON, WISCONSIN WATERSHED W-2

MONTHLY PRECIPITATION AND RUNOFF (inches)						FENNIMORE, WISCONSIN WATERSHED W-3 31.03 AREA - 52.5 ACRES										
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	P 1/	2/1.75	2/ .67	2/2.06	2.06	3.26	3.81	.45	3.14	4.03	4.65	1.69	1.52	29.09		
	Q	1.37	.09	.89	.00	.00	.00	.00	.00	.00	.00	.00	.00	2.35		
STA AV 3/	P	.91	.90	1.87	3.02	3.64	4.78	4.15	3.91	3.59	2.25	2.00	1.09	32.11		
(38-67)	Q	.18	.31	.60	.03	.10	.12	.12	.08	.02	.01	.00	.00	1.57		
MEAN P 4/		1.13	1.12	2.03	2.98	3.95	4.38	3.76	3.51	3.83	2.35	1.98	1.30	32.32		
77 YR																
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	1-24	.46	1-24	.38	1-24	.57	1-24	.79	1-24	.88	1-24	1.00	1-22	1.30	1-22	1.40
MAXIMUMS FOR PERIOD OF RECORD																
19 38 to	6-28	1.63	8- 6	1.01	8- 6	1.32	7-15	2.38	7-15	2.38	7-15	2.38	7-15	2.38	7-15	2.54
19 67	1945		1951		1951		1950		1950		1950		1950		1950	
NOTES: Watershed conditions: 21% corn; 4% grain; (7% strip cropping); 28% hay; 35% pasture; 12% idle. 1/ Precipitation is from rain gage R-6. 2/ Snow on ground measurements: Jan. 17-1.54 in; Feb. 4-0.66 in; Feb. 14-0.96 in; Feb. 21-1.08 in; Mar. 1-1.12 in; Mar. 20-0.99 in. 3/ Average includes part-year amounts of 1938 for July-Dec. 4/ Mean P based on 77-yr. (1891-1967) U.S. Weather Bureau record period at Lancaster, Wis.																
1967 SELECTED RUNOFF EVENT						FENNIMORE, WISCONSIN WATERSHED W-3 31.03										
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
1-24	.00	1/.0179	1-24	RG	R-6		1-24	1107	.0034	.0000						
				1103	.00	.00		1125	.0078	.0017						
				1110	1.03	.12		1145	.0121	.0050						
				1120	.18	.15		1200	.0200	.0092						
				1602	.01	.21		1240	.0234	.0037						
				1605	1.80	.30										
				1615	.36	.36		1415	.0223	.0598						
				1618	2.00	.46		1520	.0212	.0834						
				1620	1.20	.50		1602	.0212	.0978						
				1635	.40	.60		1610	.0287	.1010						
				1640	1.20	.70		1619	.0552	.1069						
				1700	.45	.85		1622	.0843	.1106						
				1718	.50	1.00		1625	.1051	.1154						
				1730	.05	1.01		1630	.1670	.1267						
								1640	.2570	.1622						
								1645	.2929	.1851						
								1650	.3212	.2107						
								1655	.3723	.2396						
								1700	.3874	.2712						
								1710	.4025	.3370						
								1720	.4630	.4092						
			1730	.4403	.4844											
			1740	.3553	.5507											
			1750	.2608	.6021											
			1800	.2079	.6411											
			1810	.1670	.6724											
			1835	.1051	.7270											
			1920	.0688	.7911											
			2025	.0508	.8538											
			2045	.0471	.8701											
			2120	.0333	.8935											
			2200	.0212	.9113											
			2240	.0130	.9226											
			2320	.0072	.9290											
			2400	.0072	.9338											
			1-25	0035	.0066	.9378										
				0145	.0042	.9439										
				0400	.0013	.9503										
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 52.937. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 31.1-5. 1/ RUNOFF PRIOR TO 1107 ON 1-24-67.																



FENNIMORE, WISCONSIN WATERSHED W-3

MONTHLY PRECIPITATION AND RUNOFF (inches)						FENNIMORE, WISCONSIN WATERSHED W-4							31.04			
						AREA - 171 ACRES										
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	P 1/2	2/1.75	2/.67	2/2.06	2.06	3.26	3.81	.45	3.14	4.03	4.65	1.69	1.52	29.09		
	Q	1.62	.05	1.12	.00	.00	.00	.00	.00	.00	.00	.00	.00	2.79		
STA AV 3/4	P	.91	.90	1.87	3.02	3.64	4.78	4.15	3.91	3.59	2.25	2.00	1.09	32.11		
(38-67)	Q	.22	.37	.79	.07	.03	.17	.15	.10	.03	.01	.00	.01	1.95		
MEAN P 4/77 YR		1.13	1.12	2.03	2.98	3.95	4.38	3.76	3.51	3.83	2.35	1.98	1.30	32.34		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	1-24	.46	1-24	.21	1-24	.67	1-24	.92	1-24	1.08	1-24	1.12	1-22	1.57	1-22	1.60
MAXIMUMS FOR PERIOD OF RECORD																
1938 TO	8-6	1.76	8-6	1.11	8-6	1.48	7-15	2.82	7-15	2.86	7-15	2.86	7-15	2.86	7-15	2.99
1967	1951		1951		1951		1950		1950		1950		1950		1950	
NOTES Watershed conditions: 34% corn; 11% grain; 26% hay; (1.10% strip cropping); 12% pasture; 16% idle; 1% roads and buildings. 1/ Precipitation is from rain gage R-6. 2/ Snow on ground measurements: Jan. 17-1.54 in; Feb. 4-0.66 in; Feb. 14-0.96 in; Feb. 21-1.08 in; Mar. 1-1.12 in; Mar. 20-0.99 in. 3/ Average includes part-year amounts of 1938 for June-Dec. 4/ Mean P based on 77-yr (1891-1967) U.S. Weather Bureau record period at Lancaster, Wis.																
1967 SELECTED RUNOFF EVENT						FENNIMORE, WISCONSIN WATERSHED W-4							31.04			
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
Event of January 24-25, 1967																
1-24	.00	1/2.0257	1-24	RG	R-6		1-24	1100	.0029	.0000						
				1103	.00	.00		1125	.0109	.0030						
				1110	1.03	.12		1145	.0330	.0102						
				1120	.18	.15		1215	.0479	.0308						
				1602	.01	.21		1230	.0493	.0430						
				1605	1.80	.30										
				1615	.36	.36		1300	.0465	.0669						
				1618	2.00	.46		1335	.0379	.0915						
				1620	1.20	.50		1500	.0284	.1378						
				1635	.40	.60		1600	.0238	.1638						
				1640	1.20	.70		1615	.0379	.1717						
				1700	.45	.85		1625	.0882	.1816						
				1718	.50	1.00		1635	.2118	.2077						
				1730	.05	1.01		1645	.3191	.2526						
								1655	.3932	.3119						
								1700	.4166	.3456						
								1710	.4392	.4169						
								1715	.4624	.4545						
								1725	.4624	.5316						
								1735	.4107	.6043						
								1745	.3504	.6678						
								1800	.2733	.7057						
								1815	.2118	.8063						
								1845	.1334	.8911						
								1920	.0882	.9543						
								2000	.0615	1.0026						
								2030	.0542	1.0316						
								2130	.0341	1.0762						
								2220	.0186	1.0977						
								2300	.0092	1.1069						
								2320	.0066	1.1095						
							1-25	2400	.0026	1.1124						
								0130	.0002	1.1138						
								0200	.0000	1.1138						
								0300	.0000	1.1138						
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 172.42. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 31.1-5. 1/ RUNOFF PRIOR TO 1100 ON 1-24-67.																



FENNIMORE, WISCONSIN WATERSHED W-4

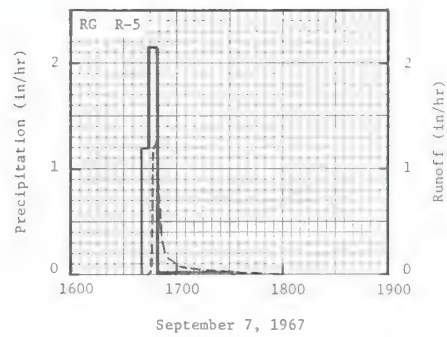
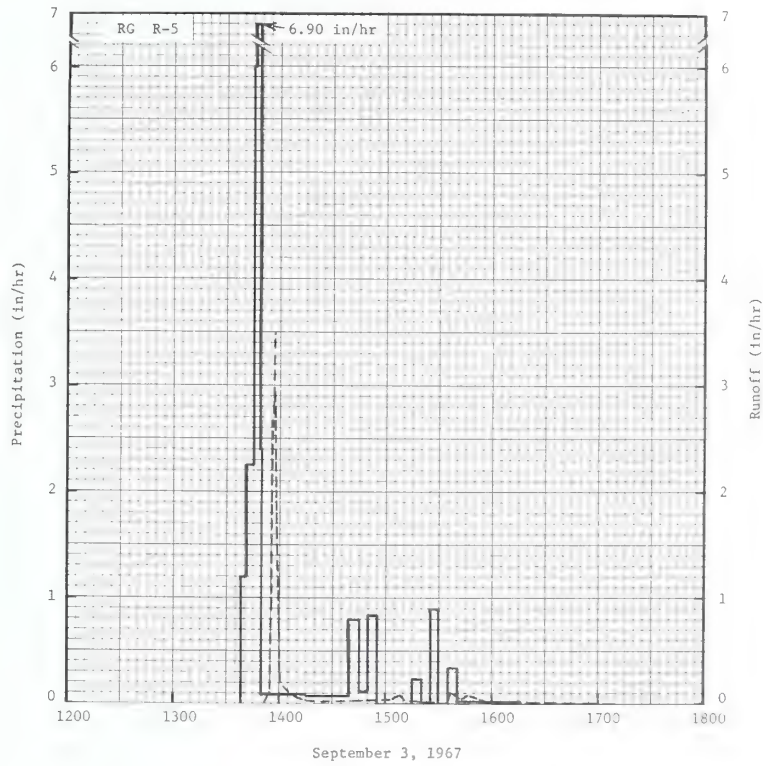
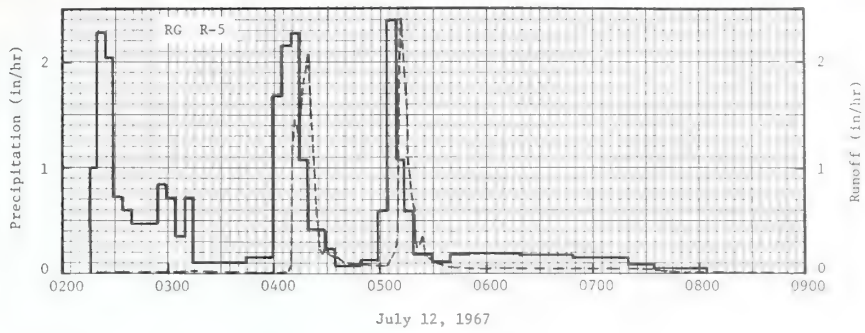
MONTHLY PRECIPITATION AND RUNOFF (inches)						CHEROKEE, OKLAHOMA WATERSHED W-10 AREA - 1.68 ACRES								34.10		
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967 P 1/ Q	.25 .00	.23 .00	.33 .00	2.22 .00	1.58 .00	6.45 .13	4.68 .99	1.19 .00	3.29 .42	1.76 .12	.19 .00	1.10 .01	23.27 1.67			
STA AV2/P (60-67) Q	.26 .00	.53 .02	1.08 .07	2.08 .04	2.25 .31	4.58 .64	2.89 .34	2.78 .05	2.80 .40	1.44 .08	1.34 .19	.98 .01	23.01 2.15			
MEAN P 3/ 49 YR	.80	.89	1.65	2.83	3.85	3.92	2.31	2.89	2.74	2.24	1.36	.96	26.44			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	9-3	3.50	7-12	.50	7-12	.75	7-12	.85	7-12	.86	7-12	.86	7-12	.86	7-12	.99
MAXIMUMS FOR PERIOD OF RECORD																
19 60 TO 1967	9-14 1962	3.77	6-22 1963	1.16	6-22 1963	1.32	6-22 1963	1.37	6-22 1963	1.37	6-22 1963	2.42	6-22 1963	2.42	6-22 1963	2.42
Notes: Watershed conditions: Continuous wheat annually, tillage during fallow period with chisel type field cultivator (Hoeme) to 6-inch depth with cross chiseling, if necessary, to obtain good tillage, final tillage before seeding wheat with a rod weeder. 1/ Precipitation data obtained from a standard gage at Rain Gage 5 location. 2/ Precipitation and runoff records began August 1960. 3/ Mean P based on 49-yr (1915-63) U.S. Weather Bureau record period at Cherokee, Oklahoma, with 20 missing months between 1943-59 estimated. The Weather Bureau records began June 1915.																
1967 SELECTED RUNOFF EVENTS						CHEROKEE, OKLAHOMA WATERSHED W-10								34.10		
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
Event of July 12, 1967																
6-16	RG R-5 .16	.00	7-12	RG 0216	R-5 .00	.00	7-12	0219	.0000	.00						
6-17	.27	.00		0219	1.00	.05		0304	.0138	T						
6-18	.28	.00		0224	2.28	.24		0312	.0084	T						
6-19	.48	.00		0229	2.04	.41		0315	.0138	T						
6-20	2.89	.12		0234	.72	.47		0318	.0084	T						
6-23	.32	.00		0239	.60	.52		0400	.0043	.01						
6-25	.77	.01		0244	.48	.56		0405	.0084	.01						
6-29	.17	.00		0254	.48	.64		0408	.0204	.01						
7-2	.23	T		0259	.84	.71		0409	.0665	.01						
7-3	.05	.00		0304	.72	.78		0410	.237	.01						
7-4	.05	.00		0309	.36	.81		0411	1.21	.02						
				0314	.72	.87		0412	1.45	.05						
				0344	.10	.92		0413	1.33	.07						
				0359	.16	.96		0415	1.51	.12						
Watershed conditions: 100% of area was in a moldboard tilled state and had been freshly worked with field cultivator just prior to event. Top soil dry and loose; below top 3 inches, soil fairly firm and moist.																
				0404	1.68	1.10		0417	1.85	.17						
				0409	2.16	1.28		0419	2.08	.24						
				0414	2.28	1.47		0420	1.78	.27						
				0419	1.08	1.56		0421	1.51	.30						
				0429	.42	1.63		0422	1.15	.32						
				0434	.24	1.65		0423	.850	.34						
				0449	.08	1.67		0424	.524	.35						
				0459	.12	1.69		0425	.380	.36						
				0504	.60	1.74		0426	.260	.36						
				0509	2.40	1.94		0427	.204	.37						
				0514	1.08	2.03		0429	.260	.38						
				0519	.60	2.08		0432	.184	.39						
				0529	.18	2.11		0435	.156	.40						
				0539	.12	2.13		0439	.114	.41						
				0549	.18	2.16		0445	.0990	.42						
				0619	.20	2.26		0508	.0787	.45						
				0649	.18	2.35		0509	.365	.45						
				0719	.16	2.43		0510	.946	.46						
				0734	.08	2.45		0511	1.85	.49						
				0804	.04	2.47		0512	2.41	.52						
								0513	2.08	.56						
								0514	1.68	.59						
								0515	1.39	.62						
								0516	1.10	.64						
								0517	.760	.65						
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 1.6940 FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USDA MISC. PUB. 994, P. 34.10-4.																

Cooperative Research Project of USDA and Oklahoma Agricultural Experiment Station

1967			SELECTED RUNOFF EVENTS				CHEROKEE, OKLAHOMA				WATERSHED W-10		34.10
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF						
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)			
Event of July 12, 1967 -- continued													
							7-12	0519	.560	.68			
								0520	.324	.68			
								0521	.237	.69			
								0523	.337	.70			
								0524	.272	.70			
								0525	.215	.71			
								0527	.174	.71			
								0529	.130	.72			
								0531	.106	.72			
								0537	.0852	.73			
								0559	.0501	.75			
								0728	.0501	.83			
								0754	.0240	.85			
								0810	.0110	.85			
								0852	.0000	.86			
Event of September 3, 1967													
8-6	RG R-5 .10	.00	9-3	RG 1338	R-5 .00	.00	9-3	1352	.0000	.00			
8-15	.24	.00		1341	1.20	.06		1354	.106	.00	T		
8-21	.27	.00		1345	2.25	.21		1355	1.05	.01			
8-30	.15	.00		1346	6.00	.31		1356	2.67	.04			
8-31	.02	.00		1348	6.90	.54		1357	3.50	.09			
				1349	2.40	.58		1358	1.21	.13			
				1415	.09	.62		1359	.597	.15			
				1439	.07	.65		1400	.310	.16			
				1445	.80	.73		1401	.204	.16			
				1450	.12	.74		1405	.122	.17			
				1455	.84	.81		1407	.0919	.17			
				1515	.00	.81		1409	.0665	.18			
				1520	.24	.83		1412	.0501	.18			
				1525	.00	.83		1422	.0318	.19			
				1529	.90	.89		1451	.0240	.20			
				1535	.00	.89		1504	.0360	.21			
				1540	.36	.92		1508	.0787	.21			
				1616	.02	.93		1511	.0360	.21			
								1518	.0138	.22			
								1533	.0084	.22			
								1536	.0501	.22			
								1537	.114	.22			
								1543	.0405	.23			
								1547	.0787	.23			
								1558	.0138	.24			
								1606	.0084	.24			
								1619	.0043	.24			
								1639	.0012	.24			
								1709	.0000	.24			
Event of September 7, 1967													
8-15	RG R-5 .24	.00	9-7	RG 1640	R-5 .00	.00	9-7	1644	.0000	.00			
8-21	.27	.00		1643	1.20	.06		1646	.001	.00	T		
8-30	.15	.00		1648	2.16	.24		1647	1.15	.01			
8-31	.02	.00		1732	.01	.25		1648	1.24	.03			
9-3	.93	.24						1649	.897	.05			
9-4	.55	.04						1650	.636	.06			
9-6	.21	.00						1651	.365	.07			
								1653	.184	.08			
								1658	.122	.09			
								1702	.0787	.10			
								1706	.0553	.10			
								1715	.0360	.11			
								1726	.0204	.11			
								1737	.0084	.12			
								1750	.0012	.12			
								1800	.0000	.12			
Watershed conditions: 100% of area stubble mulched tilled; surface soil loose and dry.													
Watershed conditions: 100% of area stubble mulched tilled; surface soil very wet, firm and smooth.													

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 1.6940 .

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 1.6940 .

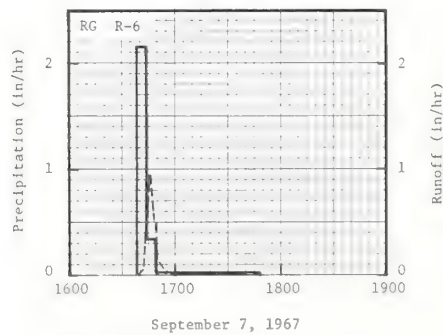
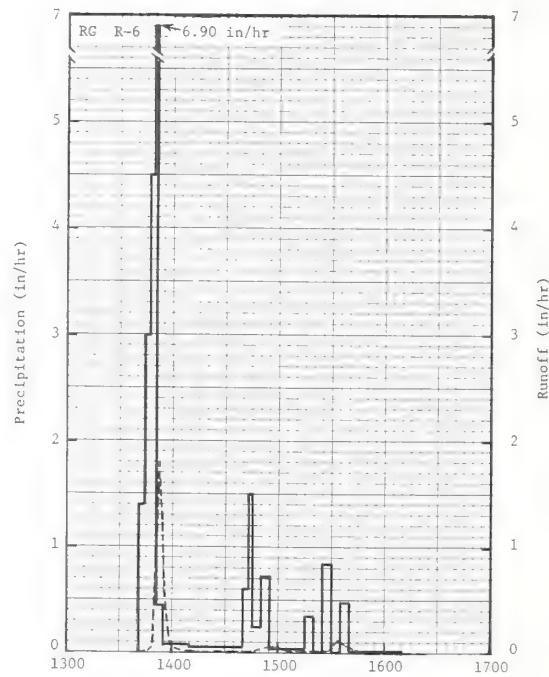
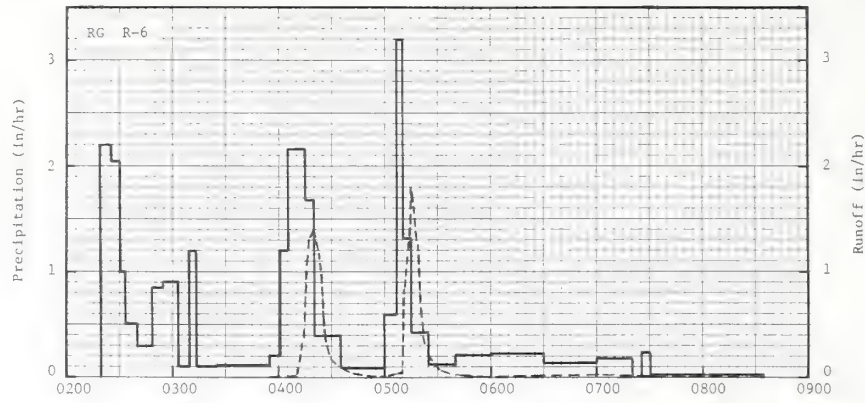


CHEROKEE, OKLAHOMA WATERSHED W-10

MONTHLY PRECIPITATION AND RUNOFF (inches)						CHEROKEE, OKLAHOMA WATERSHED W-11 AREA - 2.12 ACRES								34.11		
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	P1/ Q	.25 .00	.22 .00	.30 .00	2.25 .00	1.63 .00	6.41 .13	4.63 .58	1.19 .00	3.29 .29	1.78 .08	.18 .00	1.09 .01	23.22 1.09		
	STA AV2/P	.26	.54	1.08	2.10	2.23	4.52	2.86	2.78	2.77	1.40	1.33	.99	22.86		
	(60-67) Q	.00	.01	.07	.03	.18	.37	.17	.02	.24	.03	.12	T	1.24		
	MEAN 49 YR P3/	.80	.89	1.65	2.83	3.85	3.92	2.31	2.89	2.74	2.24	1.36	.96	26.44		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	7-12	1.79	7-12	.35	7-12	.51	7-12	.53	7-12	.53	7-12	.53	7-12	.53	7-12	.58
MAXIMUMS FOR PERIOD OF RECORD																
1960 TO 1967	6-2 1961	2.03	6-2 1961	.92	6-2 1961	.94	6-2 1961	.95	6-2 1961	.95	6-2 1961	.95	6-2 1961	.95	9-4 1963	1.13
Notes: Watershed conditions: Continuous wheat annually, tillage during fallow period with large sweeps (8 ft.), final tillage before seeding wheat with a rod weeder. 1/ Precipitation data obtained from a standard gage at Rain Gage 6 location. 2/ Precipitation and runoff records began August 1960. 3/ Mean P based on 49-yr (1915-63) U.S. Weather Bureau record period at Cherokee, Oklahoma, with 20 missing months between 1943-59 estimated. The Weather Bureau records began June 1915.																
1967 SELECTED RUNOFF EVENTS						CHEROKEE, OKLAHOMA WATERSHED W-11								34.11		
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
Event of July 12, 1967																
6-16	RG R-6 .16	.00	7-12	RG 0219	R-6 .00	.00	7-12	0354	.0000	.00						
6-17	.26	.00		0225	2.20	.22		0411	.0050	T						
6-18	.27	.00		0230	2.04	.39		0412	.121	T						
6-19	.48	T		0233	1.00	.44		0413	.327	.01						
6-20	2.98	.12		0240	.51	.50		0415	.641	.02						
6-23	.31	.00		0248	.30	.54		0416	1.02	.03						
6-25	.74	.01		0255	.86	.64		0417	1.30	.05						
6-29	.16	.00		0303	.90	.76		0419	1.39	.10						
7-2	.24	.00		0309	.10	.77		0422	1.20	.16						
7-3	.05	.00		0313	1.20	.85		0423	1.02	.18						
7-4	.05	.00		0325	.10	.87		0425	.641	.21						
				0355	.12	.93		0427	.327	.22						
				0401	.20	.95		0429	.191	.23						
				0405	1.20	1.03		0433	.121	.24						
Watershed conditions: 100% of area was in a moldboard tilled state and had been freshly worked with field cultivator just prior to event. Top soil dry and loose; below top 3 inches, soil fairly firm and moist.																
				0410	2.16	1.21		0441	.0447	.25						
				0415	2.16	1.39		0501	.0072	.26						
				0420	1.68	1.53		0508	.0447	.26						
				0435	.40	1.63		0510	.154	.27						
				0500	.10	1.67		0512	.841	.28						
				0507	.60	1.74		0514	1.42	.32						
				0510	3.20	1.90		0515	1.79	.35						
				0515	1.32	2.01		0516	1.66	.38						
				0525	.42	2.08		0518	1.28	.42						
				0540	.12	2.11		0520	.698	.46						
				0600	.21	2.18		0522	.424	.48						
				0630	.22	2.29		0524	.254	.49						
				0700	.14	2.36		0528	.121	.50						
				0720	.18	2.42		0532	.0606	.50						
				0725	.00	2.42		0537	.0270	.51						
				0730	.24	2.44		0551	.0097	.51						
				0800	.02	2.45		0617	.0097	.51						
				0835	.02	2.46		0641	.0193	.52						
								0724	.0072	.53						
								0820	.0000	.53						
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 2.1377. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USDA MISC. PUB. 994, P. 34.11-4.																

1967 SELECTED RUNOFF EVENTS			CHEROKEE, OKLAHOMA				WATERSHED W-11				34.11
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in./hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in./hr)	ACC. (inches)	
<u>Event of September 3, 1967</u>											
	RG R-6			RG	R-6						
8-6	.11	.00	9-3	1341	.00	.00	9-3	1342	.0000	.00	
8-15	.24	.00		1344	1.40	.07		1347	.0158		T
8-21	.27	.00		1347	3.00	.22		1348	.0606		T
8-30	.18	.00		1349	4.50	.37		1349	.221		T
8-31	.02	.00		1351	6.90	.60		1350	.737	.01	
				1355	.45	.63		1351	1.09	.03	
				1410	.08	.65		1352	1.60	.05	
				1440	.06	.68		1353	1.79	.08	
				1443	.60	.71		1354	1.14	.10	
				1445	1.50	.76		1355	.698	.12	
				1450	.24	.78		1356	.395	.13	
				1455	.72	.84		1358	.145	.13	
				1515	.03	.85		1400	.0665	.14	
				1520	.36	.88		1402	.0354	.14	
				1525	.00	.88		1406	.0193	.14	
				1530	.84	.95		1410	.0072	.14	
				1535	.00	.95		1422	.0014	.14	
				1540	.48	.99		1440	.0004	.14	
				1610	.02	1.00		1443	.0014	.14	
								1446	.0097	.14	
								1451	.0354	.15	
								1458	.0551	.15	
								1503	.0331	.15	
								1508	.0158	.16	
								1525	.0031	.16	
								1528	.0158	.16	
								1531	.0551	.16	
								1534	.129	.17	
								1538	.0787	.17	
								1542	.0399	.18	
								1549	.0158	.18	
								1555	.0050	.18	
								1624	.0000	.18	
<u>Event of September 7, 1967</u>											
	RG R-6			RG	R-6						
8-15	.24	.00	9-7	1638	.00	.00	9-7	1638	.0000	.00	
8-21	.27	.00		1643	2.16	.18		1641	.0311		T
8-30	.18	.00		1648	.36	.21		1642	.0551		T
8-31	.02	.00		1748	.02	.23		1644	.518	.01	
9-3	1.00	.18						1645	.778	.02	
9-4	.53	.03						1646	.952	.03	
9-6	.17	.00						1647	.737	.05	
								1648	.518	.06	
								1649	.340	.07	
								1651	.121	.07	
								1653	.0551	.08	
								1655	.0270	.08	
								1658	.0126	.08	
								1703	.0031	.08	
								1740	.0000	.08	
Watershed conditions: 100% of area stubble mulched tilled; surface soil loose and dry.											
Watershed conditions: 100% of area stubble mulched tilled; surface soil very wet, firm and smooth.											

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 2.1377

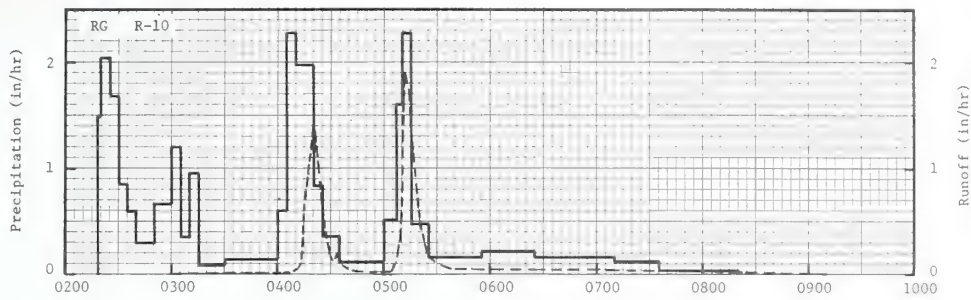


CHEROKEE, OKLAHOMA WATERSHED W-11

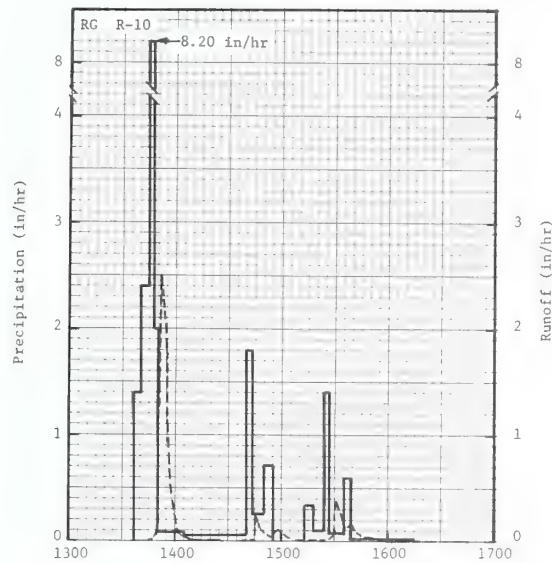
MONTHLY PRECIPITATION AND RUNOFF (inches)							CHEROKEE, OKLAHOMA WATERSHED W-12 AREA - 1.68 ACRES							34.12		
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	P ^{1/}	.25	.23	.30	2.09	1.58	6.26	4.61	1.13	3.41	1.86	.17	1.10	22.99		
	Q	.00	.00	.00	.00	.00	.17	.71	.00	.43	.09	.00	T	1.40		
	STA AV2/P (60-67) Q	.27	.56	1.07	2.01	2.18	4.50	3.14	2.80	2.76	1.46	1.35	.96	23.06		
MEAN 49 YR	P ^{2/}	.00	.01	.05	.02	.26	.66	.38	.05	.27	.05	.16	T	1.91		
	P ^{3/}	.80	.89	1.65	2.83	3.85	3.92	2.31	2.89	2.74	2.24	1.36	.96	26.44		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	9-3	2.50	7-12	.40	7-12	.56	7-12	.66	7-12	.66	7-12	.66	7-12	.66	7-12	.71
MAXIMUMS FOR PERIOD OF RECORD																
19 60 TO 1967	6-2 1961	2.96	6-2 1961	1.28	6-2 1961	1.29	6-22 1963	1.32	6-22 1963	1.32	6-22 1963	2.40	6-22 1963	2.40	6-22 1963	2.40
Notes: Watershed conditions: Continuous wheat annually, first tillage during fallow period with one-way disc harrow shallow (2 in. to 2-1/2 in.), succeeding tillages with chisel type field cultivator (Hoeme) to maximum depth of 6 inches and final tillage before seeding wheat with same tool with sweeps on shanks. 1/ Precipitation data obtained from a standard gage at Rain Gage 10 location. 2/ Precipitation and runoff records began July 1960. 3/ Mean P based on 49-yr (1915-63) U.S. Weather Bureau record period at Cherokee, Oklahoma, with 20 missing months between 1943-59 estimated. The Weather Bureau records began June 1915.																
1967 SELECTED RUNOFF EVENTS							CHEROKEE, OKLAHOMA WATERSHED W-12							34.12		
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
Event of July 12, 1967																
6-16	RG R-10 .13	.00	7-12	RG	R-10	.00	7-12	0259	.0000	.00						
6-17	.24	.00		0218	.00	.00		0313	.0027	T						
6-18	.27	.00		0225	2.04	.22		0404	.0012	T						
6-19	.52	T		0230	1.68	.36		0407	.0085	T						
6-20	2.77	.16		0235	.84	.43		0412	.0556	T						
6-23	.31	.00		0240	.60	.48		0413	.0994	.01						
6-25	.75	.01		0250	.30	.53		0415	.658	.02						
6-29	.16	.00		0300	.66	.64		0417	.925	.04						
7-2	.26	.00		0305	1.20	.74		0418	1.13	.06						
7-3	.06	.00		0310	.36	.77		0419	1.24	.08						
7-4	.04	.00		0315	.96	.85		0420	1.42	.10						
				0330	.08	.87		0421	1.27	.13						
				0400	.14	.94		0423	.925	.16						
				0405	.60	.99		0425	.618	.19						
Watershed conditions: 100% of area was in a moldboard tilled state and had been freshly worked with field cultivator just prior to event. Top soil dry and loose; below top 3 inches, soil fairly firm and moist.							0410	2.28	1.18	0427	.427	.21				
				0420	1.98	1.51		0429	.195	.22						
				0425	.84	1.58		0432	.130	.22						
				0435	.36	1.64		0434	.205	.23						
				0500	.12	1.69		0437	.0923	.24						
				0507	.51	1.75		0440	.0406	.24						
				0510	1.60	1.83		0443	.0319	.24						
				0515	2.28	2.02		0504	.0241	.25						
				0525	.48	2.10		0507	.139	.26						
				0555	.16	2.18		0509	.599	.27						
				0625	.22	2.29		0510	1.00	.28						
				0640	.16	2.33		0511	1.36	.30						
				0710	.16	2.41		0512	1.90	.33						
				0735	.12	2.46		0513	1.75	.36						
				0820	.03	2.48		0515	1.36	.41						
								0517	1.03	.45						
								0519	.618	.48						
								0522	.411	.50						
								0524	.205	.51						
								0529	.107	.52						
								0549	.0556	.55						
								0700	.0556	.61						
								0754	.0279	.65						
								0910	.0000	.66						
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 1.6940 . FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USDA MISC. PUB. 994, P. 34.12-5.																

1967			SELECTED RUNOFF EVENTS				CHEROKEE, OKLAHOMA		WATERSHED W-12		34.12
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)	
Event of September 3, 1967											
8-6	RG R-10 .10	.00	9-3	RG 1337	R-10 .00	.00	9-3	1345	.0000	.00	
8-15	.19	.00		1340	1.40	.07		1347	.0085	T	
8-21	.27	.00		1344	2.40	.23		1348	.0362	T	
8-30	.16	.00		1347	8.20	.64		1349	.139	T	
8-31	.02	.00		1350	2.00	.74		1350	.396	.01	
				1405	.08	.76		1351	1.22	.02	
				1440	.05	.79		1352	2.50	.05	
				1443	1.80	.88		1353	2.09	.09	
				1450	.26	.91		1354	1.79	.12	
Watershed conditions: 100% of area stubble mulched tilled; surface soil loose and dry.				1455	.72	.97		1355	1.16	.15	
				1513	.00	.97		1356	.901	.16	
				1518	.36	1.00		1357	.562	.18	
				1524	.10	1.01		1359	.262	.19	
				1527	1.40	1.08		1401	.139	.20	
				1535	.08	1.09		1403	.0610	.20	
				1538	.60	1.12		1406	.0319	.20	
				1615	.02	1.13		1409	.0110	.20	
								1414	.0027	.20	
								1427	.0000	.20	
								1437	.0000	.20	
								1445	.0085	.20	
								1446	.238	.20	
								1448	.114	.21	
								1451	.0790	.22	
								1454	.0406	.22	
								1456	.0790	.22	
								1458	.107	.22	
								1500	.0668	.23	
								1504	.0241	.23	
								1507	.0110	.23	
								1515	.0027	.23	
								1526	.0027	.23	
								1529	.0556	.23	
								1530	.262	.23	
								1531	.367	.24	
								1533	.262	.25	
								1536	.122	.26	
								1539	.156	.27	
								1541	.114	.27	
								1545	.0503	.28	
								1556	.0139	.28	
								1611	.0043	.28	
								1647	.0000	.28	
Event of September 7, 1967											
8-15	RG R-10 .19	.00	9-7	RG 1636	R-10 .00	.00	9-7	1636	.0000	.00	
8-21	.27	.00		1639	2.80	.14		1641	.0454	T	
8-30	.16	.00		1642	1.80	.25		1642	.262	T	
8-31	.02	.00		1652	.12	.27		1643	.580	.01	
9-3	1.13	.28		1729	.02	.28		1644	.808	.02	
9-4	.57	.04						1645	.763	.03	
9-6	.20	.00						1646	.678	.05	
Watershed conditions: 100% of area stubble mulched tilled; surface soil very wet, firm and smooth.								1647	.492	.06	
								1649	.325	.07	
								1651	.216	.08	
								1655	.107	.09	
								1658	.0728	.09	
								1701	.0319	.09	
								1706	.0170	.10	
								1732	.0027	.10	
								1807	.0000	.10	

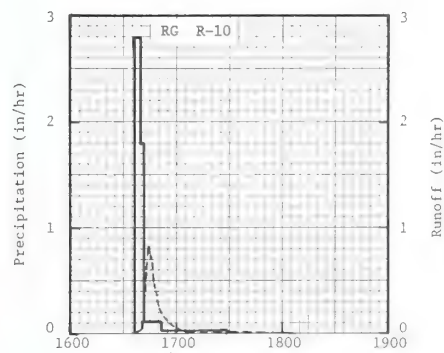
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 1.6940



July 12, 1967



September 3, 1967



September 7, 1967

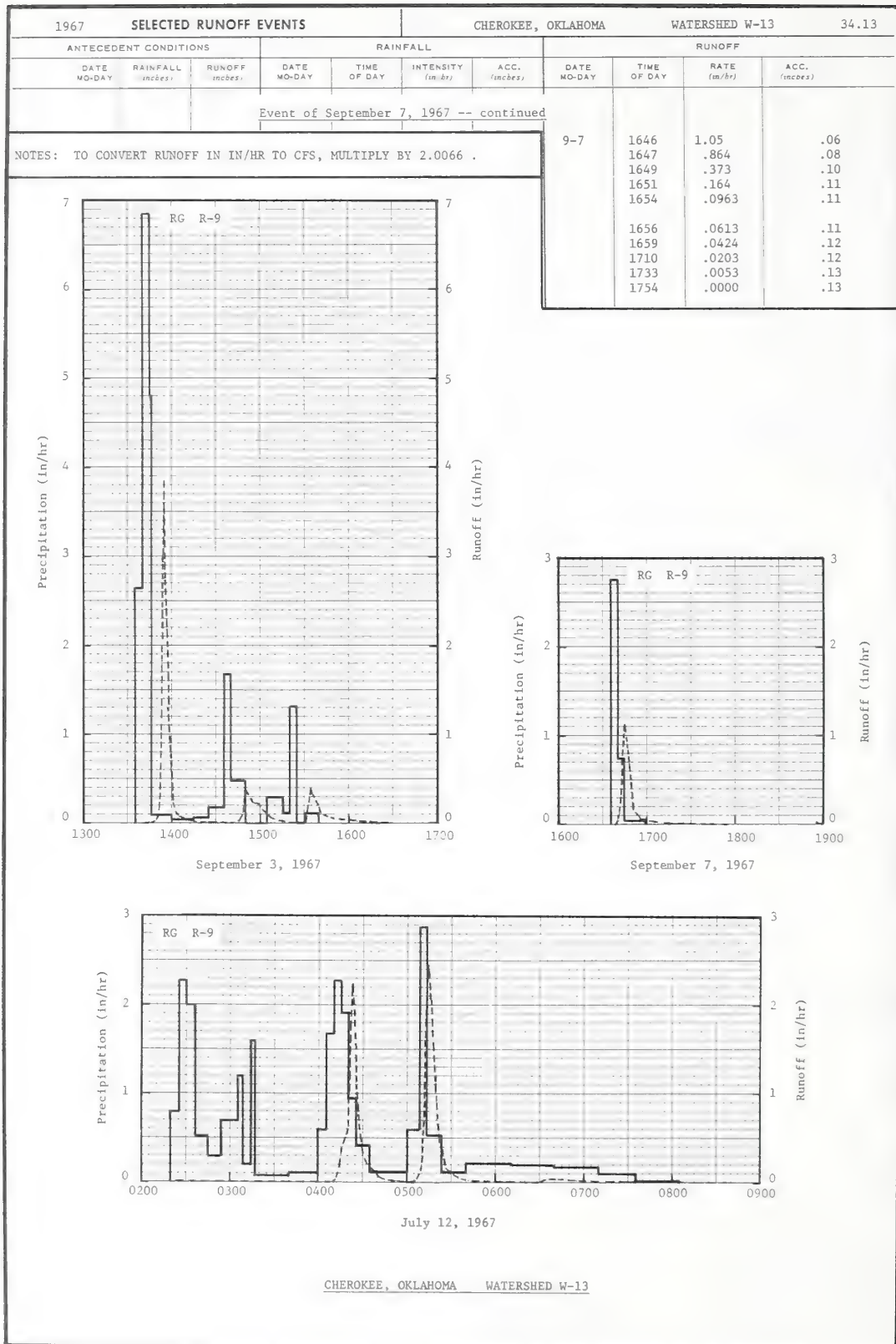
CHEROKEE, OKLAHOMA WATERSHED W-12

MONTHLY PRECIPITATION AND RUNOFF (inches)							CHEROKEE, OKLAHOMA WATERSHED W-13 AREA - 1.99 ACRES							34.13		
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	P 1/ Q	.25 .00	.22 .00	.30 .00	2.32 .00	1.67 .00	6.66 .34	4.65 .75	1.18 .00	3.83 .63	1.84 .16	.19 .00	1.13 T	24.24 1.88		
	STA AV2/P (60-67) Q	.26 .00	.55 .02	1.08 .06	2.14 .02	2.25 .24	4.53 .52	3.20 .28	2.78 .01	2.88 .28	1.48 .05	1.37 .18	.98 T	23.50 1.66		
	MEAN P 3/ 49 YR	.80	.89	1.65	2.83	3.85	3.92	2.31	2.89	2.74	2.24	1.36	.96	26.44		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	9-3	3.83	7-12	.50	7-12	.62	7-12	.65	7-12	.65	7-12	.65	7-12	.65	7-12	.75
MAXIMUMS FOR PERIOD OF RECORD																
19 60 TO 1967	9-3 1967	3.83	6-2 1961	1.16	6-2 1961	1.20	6-2 1961	1.20	6-2 1961	1.20	6-22 1963	1.56	6-22 1963	1.56	6-22 1963	1.56
Notes: Watershed conditions: Continuous wheat annually, tillage during fallow period with chisel type field cultivator (Hoeme) to 6 inch depth with cross chiseling, if necessary, to obtain good tillage, final tillage before seeding wheat with a rod weeder. 1/ Precipitation data obtained from a standard gage at Rain Gage 9 location. 2/ Precipitation and runoff records began July 1960. 3/ Mean P based on 49-yr (1915-63) U.S. Weather Bureau record period at Cherokee, Oklahoma, with 20 missing months between 1943-59 estimated. The Weather Bureau records began June 1915.																
1967 SELECTED RUNOFF EVENTS							CHEROKEE, OKLAHOMA WATERSHED W-13							34.13		
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
Event of July 12, 1967																
	RG R-9			RG	R-9											
6-16	.15	.00	7-12	0219	.00	.00	7-12	0219	.0000	.00						
6-17	.24	.00		0225	.80	.08		0230	.0036		T					
6-18	.27	.00		0230	2.28	.27		0409	.0053		T					
6-19	.52	T		0236	2.00	.47		0411	.0305	.01						
6-20	3.00	.32		0245	.53	.55		0413	.117	.01						
6-23	.33	.00		0253	.30	.59		0416	.401	.02						
6-25	.75	.01		0305	.70	.73		0419	.607	.05						
6-29	.16	.00		0308	1.20	.79		0421	.977	.07						
7-2	.24	.00		0314	.20	.81		0422	2.00	.10						
7-3	.05	.00		0317	1.60	.89		0423	2.22	.13						
7-4	.04	.00		0340	.08	.92		0425	1.12	.18						
				0400	.12	.96		0427	.681	.21						
				0405	.60	1.01		0430	.309	.24						
				0410	1.68	1.15		0433	.201	.25						
				0415	2.28	1.34		0438	.124	.26						
				0420	1.92	1.50		0441	.0721	.27						
				0425	.96	1.58		0445	.0382	.27						
				0435	.42	1.65		0502	.0071	.28						
				0450	.12	1.68		0506	.0235	.28						
				0500	.12	1.70		0509	.164	.28						
				0508	.60	1.78		0510	.415	.29						
				0513	2.88	2.02		0511	.931	.30						
				0523	.54	2.11		0512	1.63	.32						
				0540	.11	2.14		0513	2.00	.35						
				0610	.22	2.25		0514	2.46	.39						
				0640	.20	2.35		0515	2.34	.43						
				0710	.18	2.44		0516	2.07	.46						
				0735	.10	2.48		0517	1.63	.49						
				0805	.02	2.49		0519	1.00	.54						
								0520	.822	.55						
								0522	.459	.57						
								0524	.297	.58						
								0527	.173	.60						
								0530	.0963	.60						
								0537	.0343	.61						
								0542	.0173	.61						
								0549	.0173	.61						
								0603	.0235	.62						
								0628	.0235	.63						
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 2.0066. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USDA MISC. PUB. 994, P. 34.13-5.																

Cooperative Research Project of USDA and Oklahoma Agricultural Experiment Station

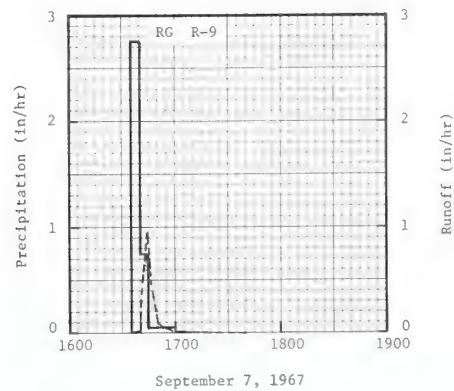
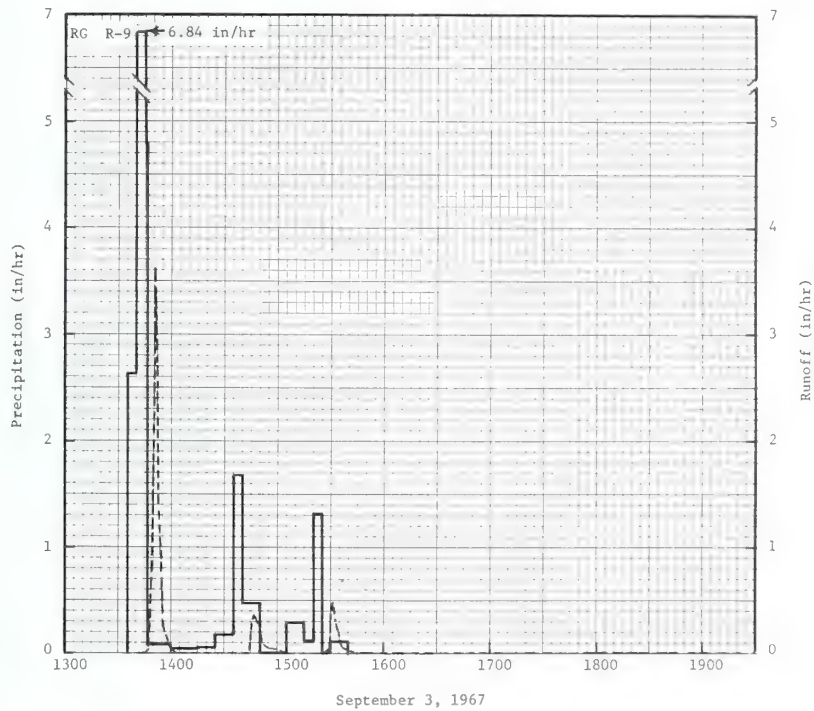
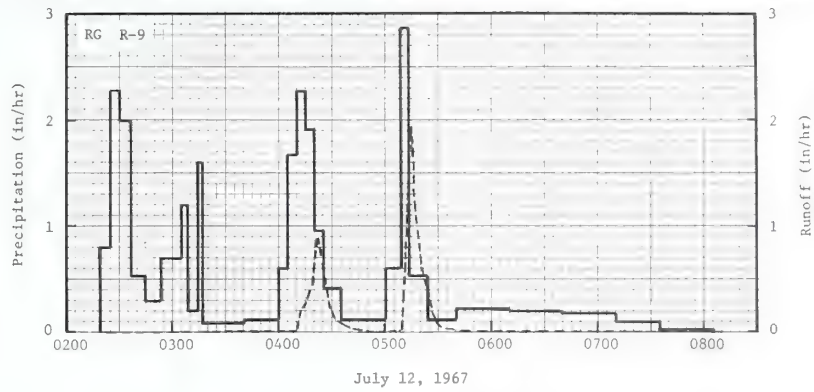
1967 SELECTED RUNOFF EVENTS			CHEROKEE, OKLAHOMA				WATERSHED W-13				34.13
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)	
<u>Event of July 12, 1967 -- continued</u>											
							7-12	0634	.0382	.63	
								0646	.0269	.64	
								0700	.0235	.64	
								0721	.0117	.65	
								0735	.0053	.65	
								0757	.0010	.65	
								0841	.0000	.65	
<u>Event of September 3, 1967</u>											
8-6	RG R-9 .11	.00	9-3	RG 1335	R-9 .00	.00	9-3	1340	.0000	.00	
8-15	.25	.00		1340	2.64	.22		1347	.0071	T	
8-21	.25	.00		1345	6.84	.79		1349	.0235	T	
8-30	.23	.00		1346	4.80	.87		1351	.103	T	
8-31	.02	.00		1400	.09	.89		1352	.334	.01	
Watershed conditions: 100% of area stubble mulched tilled; surface soil loose and dry.				1415	.04	.90		1353	1.15	.02	
				1425	.06	.91		1354	3.01	.05	
				1435	.18	.94		1355	3.83	.11	
				1440	1.68	1.08		1356	2.87	.17	
				1450	.48	1.16		1357	2.04	.21	
				1505	.00	1.16		1358	1.28	.23	
				1515	.30	1.21		1359	.760	.25	
				1520	.12	1.22		1401	.241	.27	
				1525	1.32	1.33		1402	.156	.27	
				1530	.00	1.33		1405	.0778	.28	
				1540	.12	1.35		1413	.0173	.28	
								1417	.0071	.28	
								1431	.0000	.28	
								1443	.0000	.28	
								1446	.0093	.28	
								1448	.117	.28	
								1450	.401	.29	
								1451	.347	.30	
								1452	.322	.31	
								1455	.231	.32	
								1458	.221	.33	
								1502	.156	.34	
								1506	.0838	.35	
								1511	.0382	.36	
								1518	.0143	.36	
								1528	.0000	.36	
								1531	.0143	.36	
								1533	.201	.36	
								1534	.401	.37	
								1536	.309	.38	
								1539	.201	.39	
								1541	.124	.40	
								1550	.0613	.41	
								1600	.0305	.42	
								1606	.0173	.42	
								1615	.0071	.42	
								1629	.0000	.42	
<u>Event of September 7, 1967</u>											
8-15	RG R-9 .25	.00	9-7	RG 1635	R-9 .00	.00	9-7	1638	.0000	.00	
8-21	.25	.00		1640	2.76	.23		1640	.0022	T	
8-30	.23	.00		1644	.75	.28		1641	.0382	T	
8-31	.02	.00		1700	.04	.29		1642	.221	T	
9-3	1.35	.42						1643	.643	.01	
9-4	.65	.08						1644	1.07	.02	
9-6	.20	.00						1645	1.12	.04	
Watershed conditions: 100% of area stubble mulched tilled; surface soil very wet, firm and smooth.											

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 2.0066



MONTHLY PRECIPITATION AND RUNOFF (inches)							CHEROKEE, OKLAHOMA WATERSHED W-14 AREA - 2.16 ACRES							34.14		
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	P 1/ O	.25 .00	.22 .00	.30 .00	2.32 .00	1.67 .00	6.66 .20	4.65 .43	1.18 .00	3.83 .45	1.84 .05	.19 .00	1.13 T	24.24 1.13		
STA AV2/P (60-67) Q		.26 .00	.55 .01	1.08 .03	2.14 .02	2.25 .25	4.53 .65	2.86 .32	2.78 .02	2.88 .26	1.48 .01	1.37 .00	.98 T	23.16 1.57		
MEAN P 3/ 49 YR		.80	.89	1.65	2.83	3.85	3.92	2.31	2.89	2.74	2.24	1.36	.96	26.44		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	9-3	3.61	7-12	.30	7-12	.41	7-12	.42	7-12	.42	7-12	.42	7-12	.42	9-3	.45
MAXIMUMS FOR PERIOD OF RECORD																
1960 TO 1967	9-3 1967	3.61	7-28 1963	1.20	7-28 1963	1.36	7-28 1963	1.37	7-28 1963	1.37	6-22 1963	2.18	6-22 1963	2.18	6-22 1963	2.18
Notes: Watershed conditions: Continuous wheat annually, first tillage during fallow period with one-way disc harrow shallow (2 in. to 2-1/2 in), succeeding tillages with chisel type field cultivator (Hoeme) to maximum depth of 6 inches and final tillage before seeding wheat with same tool with sweeps on shanks. 1/ Precipitation data obtained from a standard gage at Rain Gage 9 location. 2/ No runoff record in 1964 due to hole in gage well. Precipitation and runoff records began September 1960. 3/ Mean P based on 49-yr (1915-63) U.S. Weather Bureau record period at Cherokee, Oklahoma, with 20 missing months between 1943-59 estimated. The Weather Bureau records began June 1915.																
1967 SELECTED RUNOFF EVENTS							CHEROKEE, OKLAHOMA WATERSHED W-14							34.14		
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
Event of July 12, 1967																
6-16	RG R-9 .15	.00	7-12	RG 0219	R-9 .00	.00	7-12	0223	.0000	.00						
6-17	.24	.00		0225	.80	.08		0225	.0010	T						
6-18	.27	.00		0230	2.28	.27		0300	.0010	T						
6-19	.52	T		0236	2.00	.47		0320	.0010	T						
6-20	3.00	.32		0245	.53	.55		0345	.0000	T						
6-23	.33	.00		0253	.30	.59		0401	.0000	T						
6-25	.75	.01		0305	.70	.73		0409	.0048	T						
6-29	.16	.00		0308	1.20	.79		0411	.0517	T						
7-2	.24	.00		0314	.20	.81		0413	.231	.01						
7-3	.05	.00		0317	1.60	.89		0416	.284	.02						
7-4	.04	.00		0340	.08	.92		0418	.435	.03						
				0400	.12	.96		0420	.679	.05						
				0405	.60	1.01		0422	.876	.08						
				0410	1.68	1.15		0425	.625	.11						
Watershed conditions: 100% of area was in a moldboard tilled state and had been freshly worked with field cultivator just prior to event. Top soil dry and loose; below top 3 inches, soil fairly firm and moist.					0415	2.28	1.34	0427	.421	.13						
				0420	1.92	1.50	0429	.212	.14							
				0425	.96	1.58	0432	.114	.15							
				0435	.42	1.65	0436	.0769	.16							
				0450	.12	1.68	0440	.0315	.16							
				0500	.12	1.70	0453	.0010	.16							
				0508	.60	1.78	0502	.0010	.16							
				0513	2.88	2.02	0505	.0107	.16							
				0523	.54	2.11	0508	.0085	.16							
				0540	.11	2.14	0511	.464	.17							
				0610	.22	2.25	0512	.855	.18							
				0640	.20	2.35	0513	1.18	.20							
				0710	.18	2.44	0514	1.87	.22							
				0735	.10	2.48	0515	1.94	.25							
				0805	.02	2.49	0516	1.65	.28							
							0517	1.38	.31							
							0518	.963	.33							
							0520	.643	.35							
							0523	.435	.38							
							0526	.222	.40							
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 2.1780 . FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USDA MISC. PUB. 994, P. 34.14-4.																

1967 SELECTED RUNOFF EVENTS			CHEROKEE, OKLAHOMA				WATERSHED W-14			34.14
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)
<u>Event of July 12, 1967 -- continued</u>										
							7-12	0528	.128	.40
								0530	.0715	.41
								0534	.0351	.41
								0539	.0159	.41
								0542	.0066	.41
								0550	.0033	.41
								0633	.0033	.42
								0810	.0000	.42
<u>Event of September 3, 1967</u>										
8-6	RG R-9 .11	.00	9-3	RG 1335	R-9 .00	.00	9-3	1342	.0000	.00
8-15	.25	.00		1340	2.64	.22		1346	.0033	T
8-21	.25	.00		1345	6.84	.79		1347	.0280	T
8-30	.23	.00		1346	4.80	.87		1348	.435	T
8-31	.02	.00		1400	.09	.89		1349	.897	.02
				1415	.04	.90		1350	2.01	.04
				1425	.06	.91		1351	3.61	.09
				1435	.18	.94		1352	2.76	.14
				1440	1.68	1.08		1353	1.50	.17
				1450	.48	1.16		1354	.855	.19
				1505	.00	1.16		1355	.494	.21
				1515	.30	1.21		1357	.167	.22
				1520	.12	1.22		1359	.0612	.22
				1525	1.32	1.33		1401	.0280	.22
				1530	.00	1.33		1403	.0048	.22
				1540	.12	1.35		1444	.0010	.22
								1446	.284	.23
								1447	.355	.23
								1448	.284	.24
								1450	.143	.24
								1455	.0517	.25
								1500	.0390	.25
								1503	.0048	.25
								1510	.0010	.25
								1527	.0010	.26
								1529	.0351	.26
								1530	.381	.26
								1531	.479	.27
								1532	.381	.27
								1534	.212	.28
								1537	.0612	.29
								1539	.0351	.29
								1542	.0216	.29
								1545	.0021	.29
								1900	.0010	.30
								1922	.0000	.30
<u>Event of September 7, 1967</u>										
8-15	RG R-9 .25	.00	9-7	RG 1635	R-9 .00	.00	9-7	1637	.0000	.00
8-21	.25	.00		1640	2.76	.23		1640	.0010	T
8-30	.23	.00		1644	.75	.28		1641	.241	T
8-31	.02	.00		1700	.04	.29		1642	.494	.01
9-3	1.35	.42						1643	.774	.02
9-4	.65	.08						1644	.963	.03
9-6	.20	.00						1645	.834	.05
								1646	.608	.06
								1647	.421	.07
								1649	.184	.08
								1651	.0885	.08
								1653	.0563	.09
								1655	.0390	.09
								1658	.0159	.09
								1711	.0033	.09
								1741	.0000	.09
Watershed conditions: 100% of area stubble mulched tilled; surface soil loose and dry.										
Watershed conditions: 100% of area stubble mulched tilled; surface soil very wet, firm and smooth.										
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 2.1780 .										



CHEROKEE, OKLAHOMA WATERSHED W-14

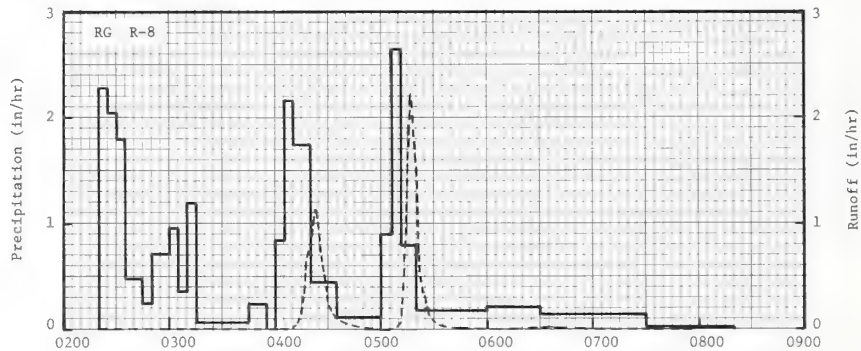
MONTHLY PRECIPITATION AND RUNOFF (inches)						CHEROKEE, OKLAHOMA WATERSHED W-15 AREA - 2.15 ACRES								34.15		
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	P 1/ Q	.25 .00	.23 .00	.28 .00	2.22 .00	1.60 .00	6.54 .49	4.56 .54	1.16 .00	3.44 .44	1.77 .05	.17 .00	1.13 T	23.35 1.52		
	STA AV2/P (60-67) Q	.27 .00	.56 .01	1.08 .08	2.06 .03	2.20 .37	4.45 .71	2.81 .19	2.68 .01	2.74 .22	1.44 .02	1.35 .15	.98 T	22.62 1.79		
	MEAN P 3/ 49 YR	.80	.89	1.65	2.83	3.85	3.92	2.31	2.89	2.74	2.24	1.36	.96	26.44		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	9-3	3.88	7-12	.35	7-12	.47	7-12	.49	7-12	.49	7-12	.49	7-12	.49	7-12	.54
MAXIMUMS FOR PERIOD OF RECORD																
19 60 TO 19 67	9-3 1967	3.88	6-23 1963	1.30	6-23 1963	1.53	6-23 1963	1.58	6-22 1963	1.67	6-22 1963	2.90	6-22 1963	2.90	6-22 1963	2.90
Notes: Watershed conditions: Continuous wheat annually, tillage during fallow period with large sweeps (8 ft.), final tillage before seeding wheat with a rod weeder. 1/ Precipitation data obtained from a standard gage at Rain Gage 8 location. 2/ Precipitation and runoff records began September 1960. 3/ Mean P based on 49-yr (1915-63) U.S. Weather Bureau record period at Cherokee, Oklahoma, with 20 missing months between 1943-59 estimated. The Weather Bureau records began June 1915.																
1967 SELECTED RUNOFF EVENTS						CHEROKEE, OKLAHOMA WATERSHED W-15								34.15		
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
Event of July 12, 1967																
6-16	RG R-8 .15	.00	7-12	RG 0220	R-8 .00	.00	7-12	0220	.0000	.00						
6-17	.25	.00		0225	2.28	.19		0234	.0030	T						
6-18	.26	.00		0230	2.04	.36		0255	.0014	T						
6-19	.49	T		0235	1.80	.51		0314	.0030	T						
6-20	3.04	.46		0245	.48	.59		0324	.0000	T						
6-23	.33	.00		0250	.24	.61		0346	.0049	T						
6-25	.72	.02		0300	.72	.73		0410	.0096	T						
6-29	.15	.00		0305	.96	.81		0412	.0441	T						
7-2	.24	.00		0310	.36	.84		0414	.119	.01						
7-3	.05	.00		0315	1.20	.94		0416	.309	.01						
7-4	.03	.00		0345	.06	.97		0418	.687	.03						
				0355	.24	1.01		0420	.849	.06						
				0400	.00	1.01		0422	1.03	.09						
				0405	.84	1.08		0423	1.13	.11						
				0410	2.16	1.26		0424	1.01	.12						
				0420	1.74	1.55		0426	.726	.15						
				0435	.44	1.66		0428	.448	.17						
				0500	.12	1.71		0430	.262	.18						
				0506	.90	1.80		0432	.169	.19						
				0511	2.64	2.02		0435	.0972	.20						
				0520	.80	2.14		0441	.0543	.21						
				0600	.18	2.26		0449	.0190	.21						
				0630	.22	2.37		0502	.0014	.21						
				0700	.14	2.44		0509	.0228	.21						
				0730	.14	2.51		0511	.0714	.21						
				0820	.02	2.53		0512	.239	.22						
								0513	.613	.22						
								0514	.893	.24						
								0515	1.70	.26						
								0516	2.11	.29						
								0517	2.22	.32						
								0518	1.93	.36						
								0519	1.57	.39						
								0520	1.10	.41						
								0521	.726	.43						
								0522	.543	.44						
								0524	.335	.45						
								0526	.188	.46						
								0528	.119	.47						
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 2.1679 . FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USDA MISC. PUB. 994, P. 34.15-4.																

Cooperative Research Project of USDA and Oklahoma Agricultural Experiment Station

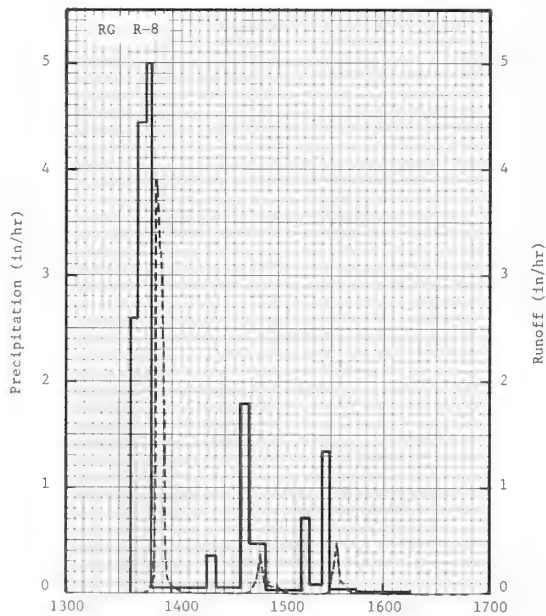
1967			SELECTED RUNOFF EVENTS				CHEROKEE, OKLAHOMA		WATERSHED W-15		34.15
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in./hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in./hr)	ACC. inches	
Event of July 12, 1967 -- continued											
							7-12	0530	.0904	.47	
								0531	.0654	.47	
								0533	.0393	.47	
								0536	.0190	.47	
								0555	.0030	.48	
								0608	.0049	.48	
								0633	.0124	.48	
								0647	.0124	.48	
								0724	.0049	.49	
								0756	.0000	.49	
Event of September 3, 1967											
8-6	RG R-8 .12	.00	9-3	RG 1337	R-8 .00	.00	9-3	1339	.0000	.00	
8-15	.20	.00		1340	2.60	.13		1345	.0071	T	
8-21	.21	.00		1345	4.44	.50		1347	.0228	T	
8-30	.27	.00		1348	5.00	.75		1349	.0972	T	
8-31	.02	.00		1420	.04	.77		1350	.229	.01	
Watershed conditions: 100% of area stubble mulched tilled; surface soil loose and dry.				1425	.36	.80		1351	.448	.01	
				1438	.05	.81		1352	3.88	.05	
				1443	1.80	.96		1353	3.25	.11	
				1453	.48	1.04		1354	2.41	.15	
				1513	.03	1.05		1355	1.86	.19	
				1518	.72	1.11		1356	.786	.21	
				1525	.09	1.12		1357	.262	.22	
				1529	1.35	1.21		1358	.119	.22	
				1544	.04	1.22		1400	.0654	.23	
				1615	.02	1.23		1402	.0393	.23	
								1404	.0155	.23	
								1411	.0049	.23	
								1441	.0004	.23	
								1445	.0190	.23	
								1447	.0714	.23	
								1448	.143	.23	
								1449	.285	.24	
								1450	.375	.24	
								1451	.285	.25	
								1453	.0972	.26	
								1458	.0714	.26	
								1501	.0441	.27	
								1503	.0266	.27	
								1506	.0124	.27	
								1512	.0030	.27	
								1524	.0030	.27	
								1529	.0124	.27	
								1532	.208	.27	
								1533	.403	.28	
								1534	.478	.29	
								1536	.119	.29	
								1538	.0714	.30	
								1540	.0306	.30	
								1542	.0124	.30	
								1550	.0030	.30	
								1607	.0004	.30	
								1647	.0000	.30	
Event of September 7, 1967											
8-15	RG R-8 .20	.00	9-7	RG 1635	R-8 .00	.00	9-7	1642	.0000	.00	
8-21	.21	.00		1638	.20	.01		1645	.0049	T	
8-30	.27	.00		1643	2.04	.18		1647	.0972	T	
8-31	.02	.00		1648	.36	.21		1648	.418	.01	
9-3	1.23	.30		1718	.02	.22		1649	.807	.02	
9-4	.61	.05						1650	1.13	.03	
9-6	.19	.00						1651	.960	.05	
Watershed conditions: 100% of area stubble mulched tilled; surface soil very wet, firm and smooth.											
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 2.1679 .											

1967 SELECTED RUNOFF EVENTS			CHEROKEE, OKLAHOMA				WATERSHED W-15				34.15
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)	
			Event of September 7, 1967 -- continued								
							9-7	1652	.613		.06
								1653	.389		.07
								1654	.179		.08
								1656	.0838		.08
								1658	.0393		.08
								1702	.0124		.08
								1713	.0030		.08
								1731	.0000		.08

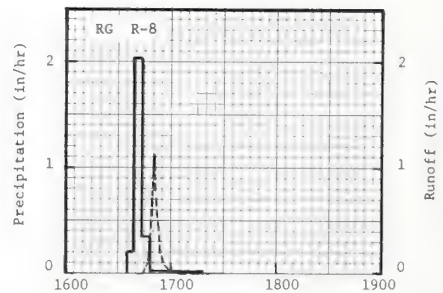
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 2.1679 .



July 12, 1967



September 3, 1967

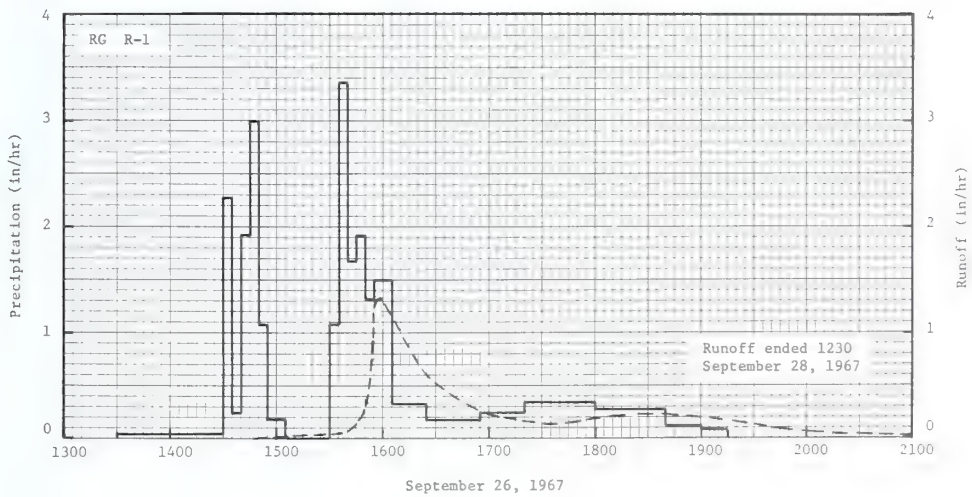
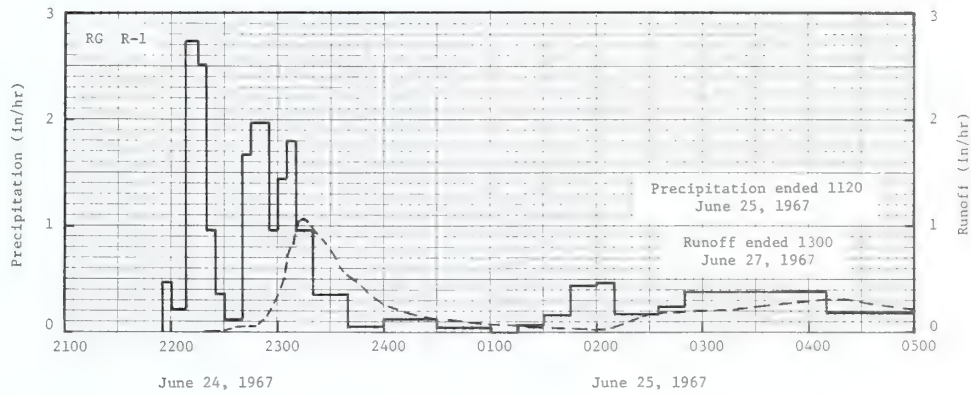


September 7, 1967

CHEROKEE, OKLAHOMA WATERSHED W-15

MONTHLY PRECIPITATION AND RUNOFF (inches)						STILLWATER, OKLAHOMA WATERSHED W-1 AREA - 16.7 ACRES								37.1		
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967 P1/ Q	1.30 .24	.45 .00	1.30 .03	2.59 .35	4.01 .79	7.25 2.23	4.23 .49	1.71 .00	7.15 1.64	2.79 .84	.77 .04	.78 .04	34.33 6.69			
STA AV2/P (51-67) Q	.58 .11	1.06 .21	1.87 .65	2.16 .58	5.00 1.65	3.87 .99	4.43 .71	2.88 .08	3.54 .43	2.42 .66	1.43 .37	1.10 .19	30.34 6.63			
MEAN P3/ 71 YR	1.10	1.26	2.13	3.43	4.78	4.14	3.12	3.03	3.71	2.89	2.05	1.34	32.98			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	9-26	1.33	9-26	.73	9-26	.92	6-24	1.55	6-24	2.03	6-24	2.13	6-24	2.15	6-20	2.21
MAXIMUMS FOR PERIOD OF RECORD																
19 51 TO 1967	4-18 1957	6.99	7-15 1951	3.31	7-15 1951	3.74	7-15 1951	3.96	10-2 1959	4.52	7-14 1951	5.18	10-1 1959	5.68	9-29 1959	7.62
NOTES: Watershed conditions: All native grass pasture. This pasture was grazed continuously from August 1966 to October 1967. There were 11 head of cattle in the 40-acre pasture from August 1966 to July 5, 1967, then an additional 13 head were added to the herd. All 24 head of cattle were removed on October 9, 1967. The cover was in poor condition when the cattle were removed. The poor cover condition can also be attributed to drought and over-grazing the previous 5 years. During the period from September 1966 to October 1967, the vegetative cover was reduced by 1.31 tons/acre due to the excessive number of cattle being grazed on this watershed. Precipitation for the year was 3.99 inches above station average. 1/ Precipitation data obtained from R-1 recording rain gage. 2/ Precipitation and runoff records began July 1951. Station average precipitation data from R-3 recording rain gage record. 3/ Mean P based on 71-yr (1893-1963) U.S. Weather Bureau record period at Stillwater, Okla.																
1967 SELECTED RUNOFF EVENTS						STILLWATER, OKLAHOMA WATERSHED W-1								37.1		
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
Event of June 24 - 25, 1967																
5-28	RG R-1 .03	.000	6-24	RG	R-1	.00	6-24	2218	.0000	.000						
5-30	.10	.000		2155	.00	.00		2224	.0047	.000						
5-31	.03	.000		2200	.48	.04		2227	.0113	.001						
6- 7	.05	.000		2208	.22	.07		2231	.0241	.002						
				2215	2.74	.39										
6-10	1.20	.002		2220	2.52	.60		2238	.0482	.006						
6-11	.37	.014		2225	.96	.68		2247	.0482	.013						
6-16	.11	.000		2230	.36	.71		2251	.0869	.018						
6-19	.21	.000		2240	.12	.73		2256	.204	.029						
6-20	1.40	.041		2245	1.68	.87		2300	.340	.046						
6-21	.00	.002		2255	1.98	1.20		2303	.470	.066						
6-23	.38	.007		2300	.96	1.28		2305	.687	.087						
				2305	1.44	1.40		2308	.809	.124						
				2310	1.80	1.55		2311	.955	.168						
				2320	.96	1.71		2313	1.06	.202						
				2340	.36	1.77		2314	1.07	.220						
				2400	.06	1.79		2317	1.06	.273						
				0030	.12	1.85		2320	1.00	.324						
				0100	.04	1.87		2328	.840	.449						
				0115	.00	1.87		2334	.662	.524						
				0130	.08	1.89		2338	.556	.564						
				0145	.16	1.93		2346	.470	.632						
				0200	.44	2.04		2353	.355	.679						
				0210	.48	2.12		2400	.283	.716						
				0235	.17	2.19	6-25	0017	.184	.781						
				0250	.24	2.25		0111	.0679	.887						
				0410	.39	2.77		0155	.0330	.921						
				0510	.19	2.96		0211	.0637	.932						
				0550	.16	3.07		0225	.154	.958						
				0650	.03	3.10		0253	.211	1.048						
				0750	.02	3.12		0309	.218	1.105						
				0850	.01	3.13		0340	.275	1.232						
				0950	.08	3.21		0417	.315	1.414						
				1020	.02	3.22		0427	.299	1.465						
				1120	.01	3.23		0450	.238	1.568						
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 16.839. FOR ORIGINAL MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 37.1-7. FOR REVISED MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1964, USDA MISC. PUB. 1194, P. 167.																

1967 SELECTED RUNOFF EVENTS			STILLWATER, OKLAHOMA				WATERSHED W-1				37.1
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL inches	RUNOFF inches	DATE MO-DAY	TIME OF DAY	INTENSITY (in./hr.)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in./hr.)	ACC. (inches)	
Event of June 24 - 25, 1967 -- continued											
							6-25	0521	.191	1.678	
								0610	.154	1.820	
								0716	.0679	1.939	
								0844	.0241	2.000	
								1014	.0241	2.032	
								1152	.0190	2.071	
								1345	.0089	2.096	
								1727	.0036	2.116	
								2400	.0017	2.133	
							6-26	1200	.0008	2.148	
								2400	.0004	2.155	
							6-27	1300	.0000	2.158	
Event of September 26, 1967											
	RG R-1			RG	R-1						
8-29	.01	.000	9-26	1330	.00	.00	9-26	1447	.0000	.000	
8-30	T	.000		1430	.04	.04		1453	.0042	T	
9- 2	.48	.000		1435	2.28	.23		1457	.0097	.001	
9- 3	.73	.001		1440	.24	.25		1502	.0167	.002	
9- 4	.22	.003		1445	1.92	.41		1509	.0274	.004	
9- 5	.08	.006		1450	3.00	.66		1513	.0330	.006	
9- 6	.87	.034		1455	1.08	.75		1528	.0375	.015	
9- 7	.00	.002		1505	.18	.78		1535	.0482	.020	
9-12	.09	.000		1530	.00	.78		1540	.0679	.025	
9-14	1.62	.132		1535	1.08	.87		1545	.129	.033	
9-15	.00	.003		1540	3.36	1.15		1548	.218	.042	
9-19	.02	.000		1545	1.68	1.29		1550	.299	.050	
9-20	.45	.024		1550	1.92	1.45		1552	.393	.062	
9-21	.00	.002		1555	1.32	1.56		1554	.933	.080	
Watershed conditions: 100% of area in native grass pasture in poor condition due to over-grazing.				1605	1.50	1.81		1555	1.16	.098	
				1625	.33	1.92		1556	1.31	.118	
				1655	.18	2.01		1557	1.31	.140	
				1720	.24	2.11		1558	1.33	.162	
				1800	.34	2.34		1559	1.32	.184	
				1840	.28	2.53		1602	1.23	.248	
				1900	.12	2.57		1605	1.17	.308	
				1915	.08	2.59		1613	.915	.447	
								1618	.770	.517	
								1623	.642	.576	
								1628	.552	.625	
								1634	.478	.675	
								1644	.355	.745	
								1656	.252	.805	
								1717	.176	.878	
								1732	.154	.920	
								1746	.161	.956	
								1835	.225	1.120	
								1859	.204	1.206	
								1937	.112	1.307	
								2024	.0375	1.360	
								2113	.0167	1.381	
								2200	.0097	1.391	
								2400	.0042	1.403	
							9-27	0155	.0026	1.410	
								0430	.0017	1.415	
								2400	.0004	1.431	
							9-28	1230	.0000	1.434	
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 16.839 .											

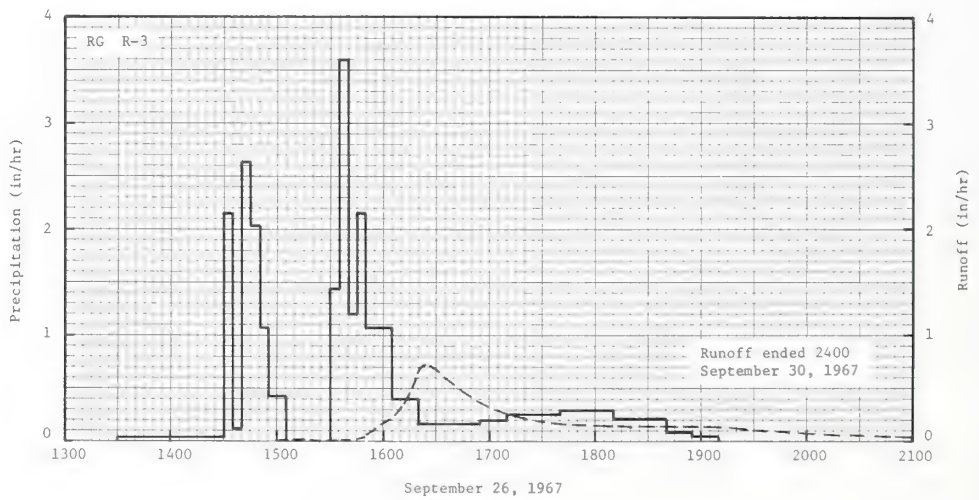
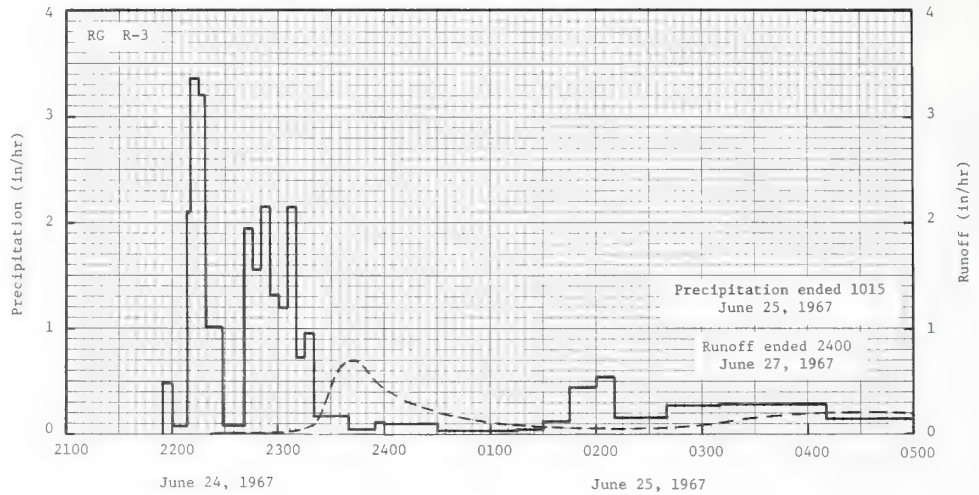


STILLWATER, OKLAHOMA WATERSHED W-1

MONTHLY PRECIPITATION AND RUNOFF (inches)						STILLWATER, OKLAHOMA				WATERSHED W-3				37.2		
						AREA - 92.0 ACRES										
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967	P1/ 0	1.37 .00	.45 .00	1.20 .00	2.46 .12	3.69 .31	6.95 1.61	3.98 .25	1.66 .00	6.67 1.25	2.44 .61	.77 .01	.82 .01	32.46 4.17		
STA AV2/P (51-67) Q		.58 .04	1.06 .12	1.87 .49	2.16 .47	5.00 1.47	3.87 .84	4.43 .68	2.88 .07	3.54 .38	2.42 .61	1.43 .20	1.10 .09	30.34 5.46		
MEAN P3/ 71 YR		1.10	1.26	2.13	3.43	4.78	4.14	3.12	3.03	3.71	2.89	2.05	1.34	32.98		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	9-26	.73	9-26	.49	9-26	.69	6-24	1.13	6-24	1.50	6-24	1.58	6-24	1.60	6-20	1.61
MAXIMUMS FOR PERIOD OF RECORD																
1951 TO 1967	7-15 1951	4.74	7-15 1951	2.87	7-15 1951	3.49	7-15 1951	3.80	10-2 1959	4.96	10-1 1959	5.18	10-1 1959	6.08	9-30 1959	8.08
NOTES: Watershed conditions: All native grass cover, 32% of watershed is in hay meadow and 68% in pasture. The meadow was cut for hay the last part of July with a yield of 1.9 tons/acre. The meadow made a good regrowth in August and September due to sufficient moisture. The pasture portion was overgrazed again this year, considering the number of cattle in each pasture and the resultant effect of below normal precipitation the previous 5 years. Precipitation for the year was slightly over 2 inches above station average. 1/ Precipitation data obtained from R-3 recording rain gage. 2/ Precipitation and runoff records began July 1951. 3/ Mean P based on 71-yr (1893-1963) U.S. Weather Bureau record period at Stillwater, Oklahoma.																
1967 SELECTED RUNOFF EVENTS						STILLWATER, OKLAHOMA				WATERSHED W-3				37.2		
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
Event of June 24 - 25, 1967																
	RG R-3			RG	R-3											
5-28	.03	.000	6-24	2155	.00	.00	6-24	2222	.0000	.000						
5-30	.10	.000		2200	.48	.04		2238	.0090	.001						
5-31	.04	.000		2208	.08	.05		2244	.0104	.002						
6- 7	.07	.000		2210	2.10	.12		2250	.0105	.003						
6-10	1.08	.000		2215	3.36	.40		2305	.0166	.005						
6-11	.37	.000		2218	3.20	.56		2310	.0429	.008						
6-16	.12	.000		2228	1.02	.73		2315	.0490	.012						
6-19	.17	.000		2241	.09	.75		2321	.102	.019						
6-20	1.41	.004		2245	1.95	.88		2323	.154	.024						
6-23	.33	.000		2250	1.56	1.01		2325	.233	.030						
				2255	2.16	1.19		2327	.319	.039						
				2300	1.32	1.30		2329	.429	.052						
				2305	1.20	1.40		2333	.568	.085						
				2310	2.16	1.58		2335	.630	.105						
Watershed conditions: 100% of area in native grass; 32% used as hay meadow in excellent condition, 46% in pasture in fair condition and 22% in pasture in poor condition.																
				2315	.72	1.64		2337	.651	.126						
				2320	.96	1.72		2341	.691	.171						
				2330	.18	1.75		2343	.688	.194						
				2340	.18	1.78		2351	.591	.280						
				2355	.04	1.79		2356	.488	.325						
			6-25	2400	.12	1.80		2400	.439	.356						
				0030	.10	1.85		0014	.306	.444						
				0115	.03	1.87		0034	.203	.527						
				0130	.04	1.88		0059	.118	.593						
				0145	.12	1.91		0133	.0658	.643						
				0200	.44	2.02		0209	.0456	.675						
				0210	.54	2.11		0230	.0593	.692						
				0240	.16	2.19		0306	.101	.741						
				0310	.28	2.33		0348	.179	.840						
				0410	.29	2.62		0437	.222	1.010						
				0510	.15	2.77		0541	.154	1.213						
				0610	.12	2.89		0648	.0998	1.350						
				0710	.01	2.90		0741	.0563	1.417						
				0810	.05	2.95		0847	.0300	1.462						
				0850	.08	3.00		0959	.0195	1.490						
				0950	.06	3.06		1320	.0109	1.544						
				1015	.05	3.08		1519	.0063	1.560						
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 92.766 . FOR MAP OF WATERSHED, SEE SELECTED RUNOFF EVENTS FOR SMALL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, USDA, ARS, JAN. 1960, P. 37.2-6.																

1967 SELECTED RUNOFF EVENTS			STILLWATER, OKLAHOMA				WATERSHED W-3				37.2
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)	
Event of June 24 - 25, 1967 -- continued											
							6-25	1830	.0029	1.574	
								2400	.0012	1.584	
							6-26	0600	.0007	1.590	
								2400	.0003	1.599	
							6-27	2400	.0000	1.605	
Event of September 26, 1967											
8-29	RG R-3 .01	.000	9-26	RG 1330	R-3 .00	.00	9-26	1459	.0000	.000	
8-30	T .000	.000		1430	.04	.04		1500	.0082	.000 T	
9- 2	.47	.000		1435	2.16	.22		1503	.0127	.001	
9- 3	.69	.000		1440	.12	.23		1508	.0065	.001	
9- 4	.22	.000		1445	2.64	.45		1515	.0081	.002	
9- 5	.10	.000		1450	2.04	.62		1527	.0044	.003	
9- 6	.74	.004		1455	1.08	.71		1537	.0086	.004	
9-12	.10	.000		1505	.42	.78		1540	.0149	.005	
9-14	1.45	.101		1530	.00	.78		1544	.0204	.006	
9-15	.00	.007		1535	1.44	.90		1548	.0450	.008	
9-19	.03	.000		1540	3.60	1.20		1551	.0806	.011	
9-20	.45	.000		1545	1.20	1.30		1554	.102	.016	
				1550	2.16	1.48		1557	.136	.022	
				1555	1.08	1.57		1603	.201	.038	
				1605	1.08	1.75		1610	.311	.068	
				1620	.40	1.85		1613	.413	.086	
				1655	.17	1.95		1616	.518	.109	
				1710	.20	2.00		1619	.641	.138	
				1740	.26	2.13		1622	.713	.172	
				1810	.30	2.28		1626	.730	.220	
				1840	.22	2.39		1629	.689	.256	
				1855	.08	2.41		1636	.592	.330	
				1910	.04	2.42		1643	.497	.394	
								1656	.374	.488	
								1713	.257	.575	
								1731	.193	.641	
								1810	.145	.746	
								1908	.148	.889	
								2002	.0815	.991	
								2028	.0538	1.020	
								2108	.0302	1.047	
								2205	.0150	1.067	
								2300	.0085	1.078	
								2400	.0058	1.085	
							9-27	0119	.0035	1.091	
								0315	.0021	1.096	
								0810	.0010	1.103	
								2400	.0005	1.114	
							9-28	1200	.0003	1.119	
								2400	.0004	1.123	
							9-29	2400	.0004	1.134	
							9-30	1200	.0003	1.138	
								2400	.0000	1.141	
Watershed conditions: 100% of area in native grass; 32% used as hay meadow in excellent condition, 46% in pasture in fair condition and 22% in pasture in poor condition.											

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 92.766 .

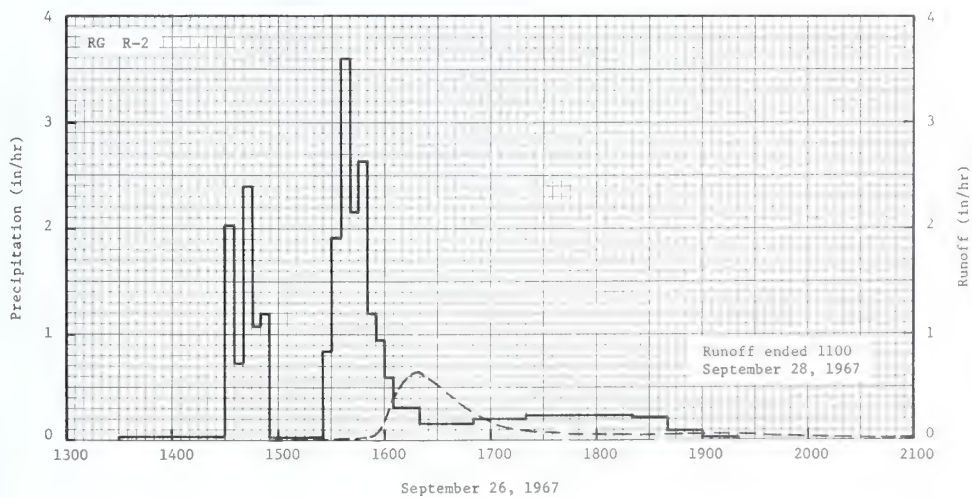
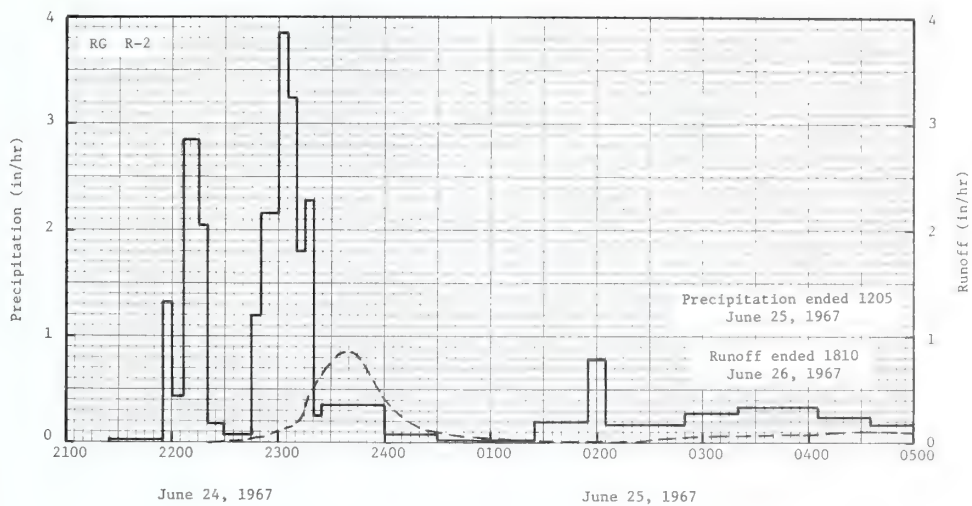


STILLWATER, OKLAHOMA WATERSHED W-3

MONTHLY PRECIPITATION AND RUNOFF (inches)						STILLWATER, OKLAHOMA WATERSHED W-4 AREA - 206 ACRES								37.3		
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967 P1/ O	1.04 .05	.40 .00	1.04 .00	2.53 .08	3.69 .20	7.77 1.33	4.14 .29	1.22 .00	6.68 .83	2.43 .34	.68 T	.82 T	32.44 3.12			
STA AV2/P (51-67)O	.51 .08	1.00 .09	1.83 .34	2.09 .31	4.81 1.19	3.73 .79	4.24 .57	2.82 .08	3.51 .38	2.43 .54	1.34 .13	1.03 .07	29.34 4.57			
MEAN P3/ 71 YR	1.10	1.26	2.13	3.43	4.78	4.14	3.12	3.03	3.71	2.89	2.05	1.34	32.98			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	6-24	.85	6-24	.58	6-24	.70	6-24	.93	6-24	1.13	6-24	1.17	6-24	1.18	6-20	1.23
MAXIMUMS FOR PERIOD OF RECORD																
19 51 TO 1967	4-18 1957	2.39	4-18 1957	1.48	4-18 1957	1.75	10-2 1959	2.63	10-2 1959	4.49	10-2 1959	4.71	10-1 1959	5.23	9-30 1959	6.77
NOTES: Watershed conditions: All native grass cover, 17.3% of watershed area is in hay meadow and 82.7% in pasture. The meadow was cut for hay the latter part of August with a near normal crop yield. The pasture portion was heavily grazed again this year. The vegetative cover still shows the effect of drought and overgrazing for the previous 5 years. Precipitation for the year was 3.10 inches above station average. 1/ Precipitation data from R-2 recording rain gage. 2/ Precipitation and runoff records began July 1951. Station average precipitation data from R-4 recording rain gage record. 3/ Mean P based on 71-yr (1893-1963) U.S. Weather Bureau record period at Stillwater, Okla.																
1967 SELECTED RUNOFF EVENTS						STILLWATER, OKLAHOMA				WATERSHED W-4				37.3		
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in./hr.)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in./hr.)	ACC. (inches)						
Event of June 24 - 25, 1967																
5-28	RG R-2 .12	.0000	6-24	RG 2125	R-2 .00	.00	6-24	2220	.0000	.0000						
5-30	.13	.0000		2155	.02	.01		2225	.0043	.0003						
5-31	.02	.0000		2200	1.32	.12		2230	.0094	.0008						
6- 7	.02	.0000		2207	.43	.17		2232	.0110	.0012						
6-10	1.24	.0014		2215	2.85	.55		2237	.0146	.0025						
6-11	.31	.0167		2220	2.04	.72		2243	.0319	.0047						
6-16	.20	.0000		2230	.18	.75		2245	.0480	.0063						
6-19	.17	.0000		2245	.08	.77		2248	.0575	.0093						
6-20	1.69	.0619		2250	1.20	.87		2253	.0635	.0148						
6-23	.37	.0000		2255	2.16	1.05		2258	.0960	.0222						
				2300	2.16	1.23		2307	.1505	.0430						
				2305	3.84	1.55		2314	.264	.0677						
				2310	3.24	1.82		2317	.420	.0866						
				2315	1.80	1.97		2321	.528	.1226						
				2320	2.28	2.16		2324	.610	.1542						
				2325	.24	2.18		2327	.679	.1903						
				2400	.36	2.21		2331	.773	.2456						
			6-25	0030	.08	2.25		2333	.818	.2753						
				0125	.01	2.26		2335	.835	.3061						
				0155	.20	2.36		2338	.849	.3533						
				0205	.78	2.49		2342	.847	.4167						
				0250	.16	2.61		2345	.811	.4632						
				0320	.28	2.75		2348	.759	.5072						
				0405	.33	3.00		2352	.669	.5604						
				0435	.24	3.12		2356	.551	.6063						
				0520	.17	3.25		2358	.433	.6249						
				0550	.16	3.33		2400	.427	.6408						
				0620	.06	3.36		0005	.336	.6729						
				0820	.02	3.40	6-25	0014	.204	.7127						
				0850	.02	3.41		0026	.121	.7446						
				0950	.05	3.46		0043	.0684	.7706						
				1020	.04	3.48		0105	.0360	.7888						
				1105	.01	3.49		0134	.0169	.8011						
				1205	.02	3.51		0205	.0125	.8081						
Watershed conditions: 100% of area in native grass, 17.3% used as hay meadow in excellent condition, 82.7% in pasture in fair to good condition.																
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 207.72. FOR ORIGINAL MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 37.3-6. FOR REVISED MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1964, USDA MISC. PUB. 1194 P. 172.																

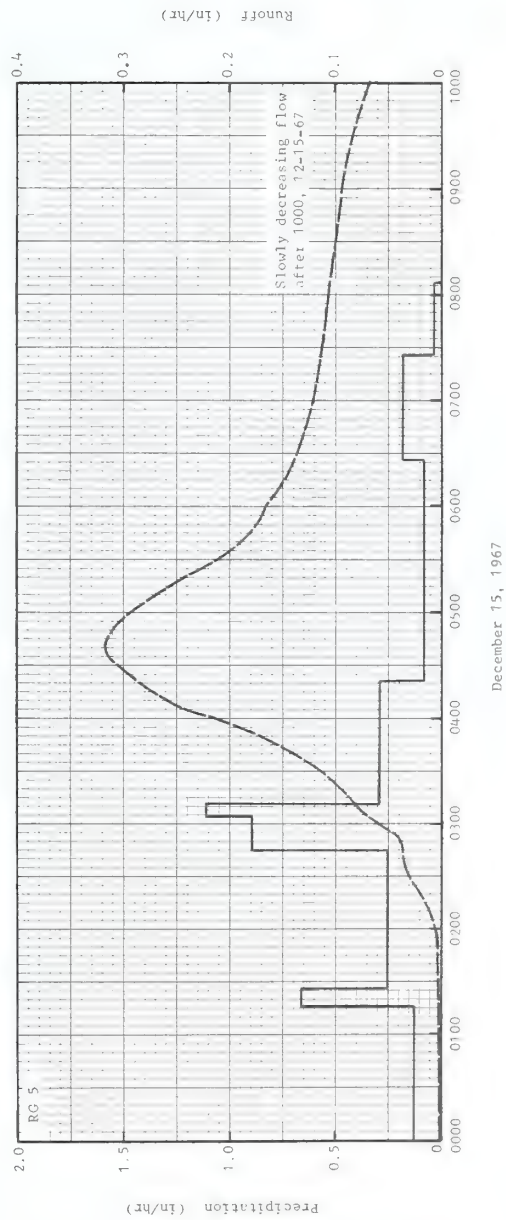
1967 SELECTED RUNOFF EVENTS			STILLWATER, OKLAHOMA				WATERSHED W-4				37.3
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)	
Event of June 24 - 25, 1967 -- continued											
							6-25	0231	.0248	.8158	
								0248	.0488	.8256	
								0306	.0626	.8431	
								0354	.0876	.9002	
								0433	.119	.9700	
								0520	.0841	1.0514	
								0631	.0523	1.1299	
								0722	.0281	1.1634	
								0834	.0129	1.1869	
								1007	.0073	1.2014	
								1115	.0071	1.2095	
								1410	.0034	1.2243	
								2040	.0013	1.2378	
							6-26	2400	.0010	1.2417	
								0720	.0004	1.2469	
								1810	.0000	1.2494	
Event of September 26, 1967											
8-29	RG R-2 .01	.0000	9-26	RG	R-2	.00	9-26	1454	.0000	.0000	
8-30	T .0000	.0000		1330	.00	.03		1459	.0016	.0001	
9- 2	.47	.0000		1430	2.04	.20		1517	.0020	.0007	
9- 3	.63	.0000		1440	.72	.26		1534	.0034	.0015	
9- 4	.15	.0000		1445	2.40	.46		1541	.0080	.0022	
9- 5	.08	.0000		1450	1.08	.55		1545	.0141	.0029	
9- 6	.73	.0024		1455	1.20	.65		1550	.0270	.0047	
9-12	.06	.0000		1525	.02	.66		1554	.0540	.0074	
9-14	1.77	.0836		1530	.84	.73		1557	.0946	.0112	
9-20	.36	.0000		1535	1.92	.89		1600	.197	.0183	
				1540	3.60	1.19		1603	.340	.0322	
				1545	2.16	1.37		1606	.463	.0538	
				1550	2.64	1.59		1611	.556	.0980	
				1555	1.20	1.69		1614	.606	.1288	
Watershed conditions: 100% of area in native grass, 17.3% used as hay meadow in good condition and 82.7% in pasture in fair to good condition.				1600	.96	1.77		1617	.631	.1613	
				1605	.60	1.82		1621	.632	.2055	
				1620	.32	1.90		1624	.602	.2379	
				1650	.16	1.98		1628	.556	.2784	
				1720	.20	2.08		1633	.483	.3240	
				1820	.24	2.32		1638	.423	.3638	
				1840	.21	2.39		1647	.297	.4213	
				1900	.09	2.42		1700	.174	.4729	
				1920	.03	2.43		1719	.0970	.5166	
								1747	.0590	.5526	
								1806	.0548	.5713	
								1845	.0621	.6113	
								1901	.0615	.6286	
								1934	.0464	.6603	
								2013	.0227	.6836	
								2101	.0101	.6964	
								2220	.0052	.7062	
								2400	.0032	.7134	
							9-27	0414	.0017	.7245	
								1123	.0008	.7340	
								1558	.0004	.7367	
							9-28	2400	.0001	.7389	
								1100	.0000	.7396	
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 207.72 .											

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 207.72 .



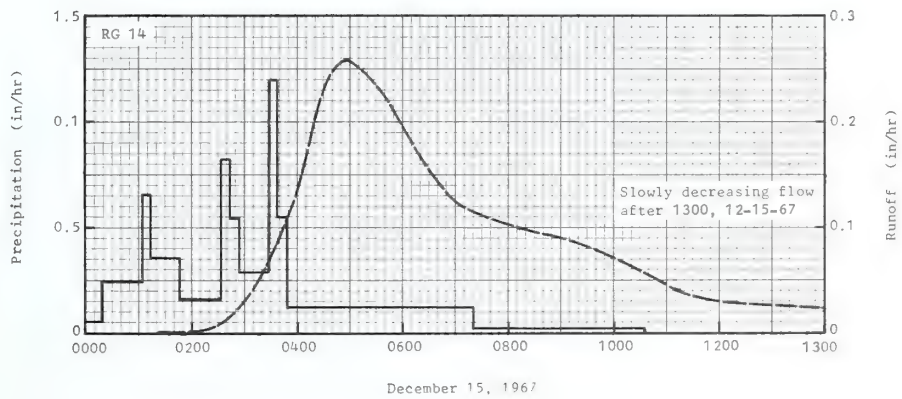
STILLWATER, OKLAHOMA WATERSHED W-4

MONTHLY PRECIPITATION AND RUNOFF (inches)							RIESE (WACO), TEXAS		WATERSHED C		42.02					
							AREA — 579 ACRES									
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	1/	.41	.45	1.20	5.48	3.73	.94	4.04	6.41	4.67	6.16	3.46	4.01	40.96		
	2/	.00	.00	.00	.45	.34	T	.04	.66	.83	1.78	1.64	1.75	7.49		
STA AVG P		1.87	2.74	2.02	3.89	4.03	3.57	1.46	2.67	3.05	2.79	3.03	2.35	33.47		
(39-67)	3/	.36	.56	.44	.99	.92	.57	.15	.21	.40	.34	.45	.53	5.92		
MEAN																
79 YR	4/	2.13	2.37	2.74	4.23	4.61	3.24	1.89	1.93	2.89	2.59	2.50	2.56	33.68		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE	MAXIMUM VOLUME FOR SELECTED TIME INTERVAL														
		1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS		
		DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	
1967	12-15	.32	12-15	.30	12-15	.51	12-15	.99	12-15	1.23	12-15	1.32	12-15	1.38	12-15	1.71
MAXIMUMS FOR PERIOD OF RECORD																
1935 TO	3-29	5/1.58	3-29	5/1.50	3-29	5/2.52	3-29	5/3.55	3-29	5/3.80	3-29	5/4.48	9-7	4.78	4-19	8.76E
1967	1965	1965	1965	1965	1965	1965	1965	1965	1965	1965	1965	1965	1942	1957	1957	1957
NOTES: Watershed land use: 71% pasture; 1% fall planted small grain, largely oats; 13% row grain crop, largely grain sorghum; 2% gravel and paved roads; 13% other. Approx. 90% of "other" is Johnsongrass and weeds in conservation reserve, but neither tilled nor grazed. 1/ Precipitation data from Thiessen method using rain gages 5, 14, and 20. 2/ Precipitation and runoff records began Feb. 1938, station not in operation July 1943 to Mar. 1, 1949; part-year amounts not included in averages. 3/ Mean P based on 79-yr (1889-1967) U. S. Weather Bureau record period at Waco, Texas. 4/ No maximums 1938, 1944-1948; maximums for 1943 occurred before July, and for 1949 after Mar. 1. 5/ During storm of Mar. 29, 1965, some water normally draining through station crossed county road and was not measured.																
1967 SELECTED RUNOFF EVENT							RIESEL (WACO), TEXAS		WATERSHED C		42.02					
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
Event of December 15-16, 1967																
11-15	3 RG 6/	.0006	12-15	RG	5		12-15	0000	.0003	.0000						
11-16	.00	.0003		0000	.00	.00		0130	.0010	.0006						
11-17	.00	.0002		0116	.13	.17		0200	.0040	.0016						
11-18	.00	.0001		0126	.66	.28		0218	.0178	.0048						
11-19	.00	.0001		0245	.25	.61		0250	.0351	.0166						
11-20	.00	.0001		0304	.88	.89		0300	.0569	.0245						
11-21	.00	.0001		0311	1.11	1.02		0310	.0784	.0358						
11-22	.00	.0002		0421	.29	1.36		0320	.0949	.0504						
11-23	.00	.0002		0626	.08	1.52		0330	.1146	.0677						
11-24	.00	.0001		0726	.18	1.70		0340	.1413	.0891						
11-25	.00	.0001		0806	.03	1.72		0350	.1719	.1151						
11-26	.00	.0001		RG	14	1.80		0400	.2187	.1468						
11-27	.38	.0002		RG	20	1.72		0410	.2593	.1867						
11-28	.09	.0001		3 RG	AVG 6/	1.74		0420	.2873	.2323						
11-29	.08	.0001						0430	.3060	.2817						
11-30	.00	.0001						0438	.3187	.3231						
12-01	.00	.0001						0450	.3107	.3861						
12-02	.09	.0001						0500	.2913	.4362						
12-04	.00	.0001						0520	.2437	.5257						
12-05	.29	.0001						0540	.1883	.5980						
12-06	.00	.0002						0600	.1650	.6567						
12-07	.00	.0001						0630	.1368	.7313						
12-08	.00	.0001						0700	.1214	.7956						
12-09	.00	.0001						0800	.1064	.9081						
12-10	.11	.0001						0900	.0942	1.0090						
12-11	.00	.0001						1000	.0670	1.0900						
12-12	.00	.0001						1200	.0318	1.1839						
12-13	.29	.0002						1456	.0147	1.2483						
12-14	2/ .34	.0035						1856	.0074	1.2900						
								2400	.0041	1.3179						
Watershed conditions: 71% pasture, all classes; 1% fall planted small grain, mostly oats, 2 to 6 inches high; 13% bedded, no crop; 2% gravel and paved roads; 13% other. Approx. 90% of "other" is Johnsongrass and weeds in conservation reserve, neither tilled nor grazed.																
								12-16	1956	2/.0013	1.3609					
NOTES: 1/ CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 583.52. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 42.4-6. 2/ THIESSEN WEIGHTED RAINFALL USING RAIN GAGES 5, 14, AND 20. 3/ RAINFALL ENDED AT 2306. 4/ NEXT EVENT BEGAN AT 2051 DEC. 16, 1967.																



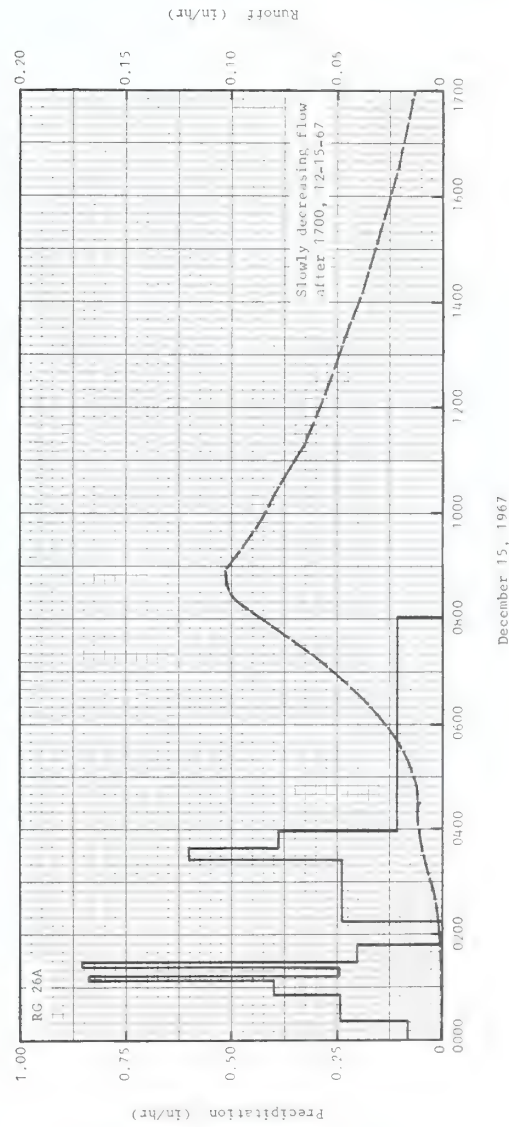
RIESEL (WACO), TEXAS WATERSHED C

MONTHLY PRECIPITATION AND RUNOFF (inches)						RIESEL (WACO), TEXAS		WATERSHED D		42.03						
						AREA — 1,110 ACRES (1.73 SQ. MILES)										
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	12-15	.40	.43	1.28	5.09	3.67	.63	3.86	5.81	4.79	6.23	3.36	4.04	39.59		
	Q	.00	.00	.00	.38	.25	T	.06	.52	.83	1.82	1.60	1.60	7.06		
STA AVG P	2/	1.96	2.73	2.12	3.85	3.94	3.62	1.49	2.54	2.97	2.65	2.93	2.36	33.16		
(38-67)Q	Q	.41	.56	.49	1.05	1.03	.57	.16	.23	.38	.34	.43	.50	6.15		
MEAN	PS															
79 YR	PS	2.13	2.37	2.74	4.23	4.61	3.24	1.89	1.93	2.89	2.59	2.50	2.56	33.68		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	12-15	.26	12-15	.25	12-15	.45	12-15	.90	12-15	1.11	11-9	1.44	11-9	1.58	11-9	1.59
MAXIMUMS FOR PERIOD OF RECORD																
1938 TO 1967	3-29	2.11	3-29	1.93	3-29	3.15	3-29	4.59	3-29	4.88	3-29	5.63	3-29	5.69	4-19	9.66E
	1965		1965		1965		1965		1965		1965		1965		1957	
NOTES: Watershed land use: 60% pasture; 6% fall planted small grain, largely oats; 3% corn; 7% cotton; 9% row grain crops, largely grain sorghum; 2% gravel and paved roads; 13% other. Approx. 90% of "other" is Johnsongrass and weeds in conservation reserve, but neither tilled nor grazed. 1/ Precipitation data from Thiessen method using rain gages 5, 14, 20, and 26A. 2/ Precipitation and runoff records began Dec. 1937: station not in operation July 1943 to Mar. 1, 1949; part-year amounts not included in averages. 3/ Mean P based on 79-yr (1889-1967) U. S. Weather Bureau record period at Waco, Texas. 4/ No maximums 1938, 1944-1948; maximums for 1943 occurred before July, and for 1949 after Mar. 1.																
1967 SELECTED RUNOFF EVENT						RIESEL (WACO), TEXAS						WATERSHED D		42.03		
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
Event of December 15-16, 1967																
11-15	4 RG 5/	.0006		RG	14		12-15	0000	.0002	.0000						
11-16	.00	.0004	12-15	0000	.00	.00		0125	.0010	.0005						
11-17	.00	.0003		0019	.06	.02		0235	.0093	.0057						
11-18	.00	.0002		0104	.24	.20		0305	.0377	.0167						
11-19	.00	.0002		0114	.66	.31		0330	.0709	.0381						
11-20	.00	.0002		0147	.36	.51		0350	.1121	.0687						
11-21	.00	.0003		0233	.17	.64		0400	.1337	.0892						
11-22	.00	.0003		0244	.82	.79		0410	.1651	.1139						
11-23	.00	.0002		0254	.54	.88		0420	.2018	.1445						
11-24	.00	.0001		0329	.29	1.05		0435	.2404	.2005						
11-25	.00	.0001		0337	1.20	1.21		0450	.2575	.2632						
11-27	.37	.0000		0349	.55	1.32		0455	.2584	.2847						
11-28	.07	.0003		0719	.12	1.74		0500	.2575	.3062						
11-29	.08	.0004		1035	.02	1.81		0515	.2503	.3699						
11-30	.00	.0002		RG	5	1.72		0535	.2279	.4496						
12-01	.00	.0002		RG	20	1.72		0555	.2018	.5215						
12-02	.09	.0002		RG	26A	1.51		0625	.1579	.6111						
12-03	.00	.0001		4 RG	AVG5/	1.75		0655	.1274	.6809						
12-05	.28	.0002						0725	.1139	.7410						
12-06	.00	.0003						0825	.0978	.8458						
12-07	.00	.0002						0925	.0834	.9373						
12-08	.00	.0001						1045	.0520	1.0274						
12-09	.00	.0001						1225	.0272	1.0911						
12-10	.10	.0001						1505	.0137	1.1428						
12-11	.00	.0001						1805	.0075	1.1729						
12-12	.00	.0002						2105	.0047	1.1907						
12-13	.28	.0002						2400	.0034	1.2024						
12-14	.34	.0023						1905	Z/.0011	1.2383						
Watershed conditions: 60% pasture, all classes; 6% fall planted small grain, mostly oats, 2 to 6 inches high; 19% bedded, no crop; 2% gravel and paved roads; 13% other. Approx. 90% of "other" is Johnsongrass and weeds in conservation reserve, neither tilled nor grazed.																
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 1119.25. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 42.4-6. 5/ THIESSEN WEIGHTED RAINFALL USING RAIN GAGES 5, 14, 20, AND 26A. 6/ RAINFALL ENDED AT 2309. 7/ NEXT EVENT BEGAN AT 2020 DEC. 16, 1967.																



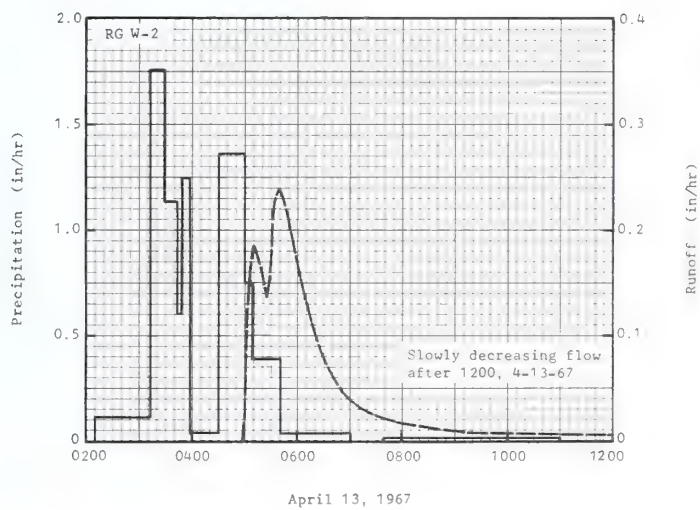
RIESEL (WACO), TEXAS WATERSHED D

MONTHLY PRECIPITATION AND RUNOFF (inches)						RIESEL (WACO), TEXAS AREA — 4,380 ACRES (6.84 SQ. MILES)						WATERSHED G 42.04				
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	P1	.32	.42	1.20	4.69	3.42	.43	3.09	3.76	4.51	5.83	3.34	3.89	34.90		
	O	.00	.00	.00	.37	.08	T	T	.03	.25	.93	1.13	1.21	4.00		
STA AVG P	2/	2.19	2.87	2.01	3.58	3.45	4.57	1.60	3.06	3.21	2.78	3.00	2.71	35.03		
(38-67) O	g	.61	.74	.48	.66	.69	.90	.13	.22	.40	.22	.54	.55	6.14		
MEAN P	3/	2.13	2.37	2.74	4.23	4.61	3.24	1.89	1.93	2.89	2.59	2.50	2.56	33.68		
79 YR																
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	12-15	.10	12-15	.10	12-15	.19	12-15	.46	11-10	.77	11-10	1.03	11-10	1.10	12-15	1.13
MAXIMUMS FOR PERIOD OF RECORD																
1935 TO 1967	3-29 1965	.95	3-29 1965	.91	3-29 1965	1.72	3-29 1965	3.39	3-29 1965	3.94	3-29 1965	4.63	3-29 1965	4.74	11-22 1940	4.82
NOTES: Watershed land use: 35% pasture; 4% fall planted small grain, largely oats; 8% corn; 7% cotton; 6% row grain crops, largely grain sorghum; 2% gravel and paved roads; 35% other. Approx. 90% of "other" is Johnsongrass and weeds in conservation reserve, but neither tilled nor grazed. 1/ Precipitation data from Thiessen method using rain gages 5, 14, 20, 26A, 30A, 43A, 45A, 56A, 65A, 70, 74A, 84A, and 89. 2/ Precipitation and runoff records begin Jan. 1938; station not in operation July 1943 to July 1, 1957; part-year amounts not included in averages. 3/ Mean P based on 79-yr (1889-1967) U. S. Weather Bureau record period at Waco, Texas. 4/ No maximums 1944 through 1957; maximums for 1943 occurred before July 1.																
1967 SELECTED RUNOFF EVENT						RIESEL (WACO), TEXAS				WATERSHED G 42.04						
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
Event of December 15-16, 1967																
11-15	13 RG 5/	.0007	12-15	RG	26A		12-15	0000	.0001	.0000						
11-16	.00	.0005			0000	.00	.00	0110	.0003	.0001						
11-17	.00	.0003			0023	.08	.03	0220	.0024	.0013						
11-18	.00	.0002			0053	.24	.15	0320	.0072	.0060						
11-19	.00	.0002			0108	.40	.25	0420	.0114	.0154						
11-20	.00	.0002		0113	.84	.32		0535	.0205	.0342						
11-21	.00	.0001		0123	.24	.36		0620	.0342	.0541						
11-22	.00	.0001		0130	.86	.46		0645	.0455	.0707						
11-27	.37	.0000		0148	.20	.52		0710	.0573	.0920						
11-28	.08	.0000		0214	.00	.52		0730	.0677	.1128						
11-29	.07	.0000		0326	.24	.81		0750	.0804	.1374						
12-02	.07	.0000		0338	.60	.93		0810	.0917	.1661						
12-05	.26	.0000		0358	.39	1.06		0820	.0988	.1819						
12-10	.14	.0000		0801	.11	1.51		0830	.1019	.1987						
12-13	.23	.0000		RG	5	1.72		0845	.1022	.2243						
12-14	2/ .34	.0003		RG	14	1.80		0855	.1022	.2413						
Watershed conditions: 38% pasture, all classes; 4% fall planted small grain, mostly oats, 2 to 6 inches high; 21% bedded, no crop; 2% gravel and paved roads; 35% other. Approx. 90% of "other" is Johnsongrass and weeds in conservation reserve, neither tilled nor grazed.				RG	20	1.72		0915	.0960	.2745						
				RG	30A	1.49		0945	.0872	.3203						
				RG	43A	1.41		1015	.0802	.3622						
				RG	48A	1.41		1045	.0725	.4003						
				RG	56A	1.51		1115	.0666	.4352						
				RG	65A	1.34		1200	.0589	.4823						
				RG	70	1.35		1300	.0492	.5362						
				RG	74A	1.36		1400	.0394	.5805						
				RG	84A	1.33		1500	.0313	.6157						
				RG	89	1.36		1600	.0241	.6433						
			13 RG	AVG5/	1.51		1800	.0136	.6796							
							2100	.0086	.7117							
							2400	.0050	.7315							
							0600	.0028	.7538							
							1200	.0020	.7677							
							1930	2/ .0015	.7802							
NOTE: 1. CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 4.4484. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 42.4-6. 2. THIENSEN WEIGHTED RAINFALL MEAN RAIN GAGES 5, 14, 20, 26A, 30A, 43A, 45A, 56A, 65A, 70, 74A, 84A, AND 89. 3. RAINFALL ENDED AT 2317. 4. NEXT EVENT BEGAN AT 2007 DEC. 16, 1967.																



RIESEL (WACO), TEXAS WATERSHED G

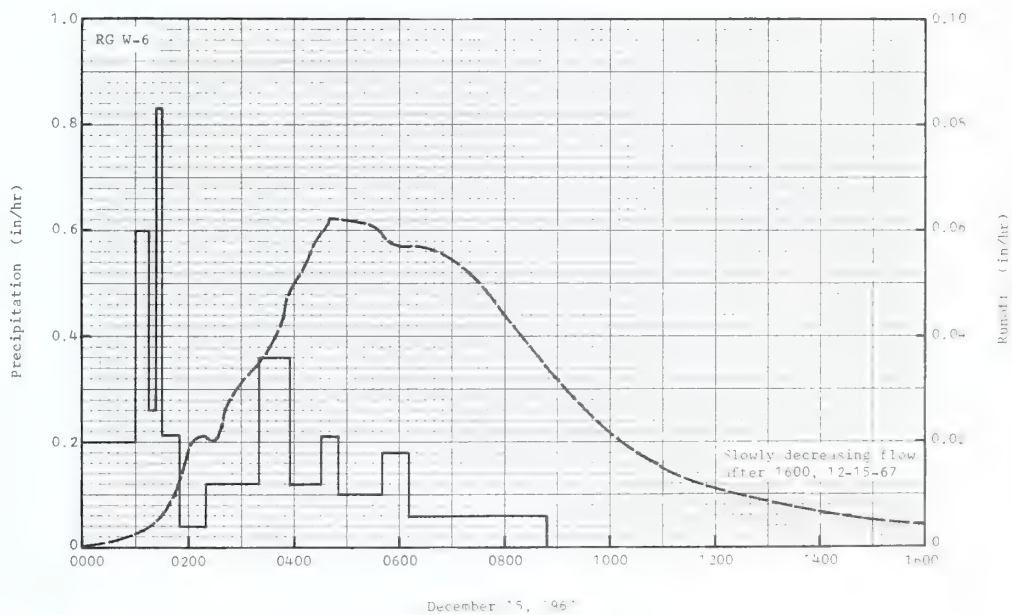
MONTHLY PRECIPITATION AND RUNOFF (inches)						RIESEL (WACO), TEXAS		WATERSHED W-1		42.06						
						AREA — 176 ACRES										
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	P1/ Q	.25 .01	.41 T	1.12 T	4.45 .36	3.55 .04	.11 T	2.20 .00	2.57 .00	3.39 .00	4.86 .01	3.47 .53	3.62 .41	30.00 1.36		
STA AVG P (38-67)		2.24 .46	2.71 .60	2.48 .61	4.03 1.06	4.35 1.25	3.33 .55	1.49 .09	2.13 .10	2.49 .15	2.55 .19	2.95 .41	2.60 .46	33.35 5.93		
MEAN P 79 YR		2.13	2.37	2.74	4.23	4.61	3.24	1.89	1.93	2.89	2.59	2.50	2.56	33.68		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	4-13	.24	4-13	.18	4-13	.27	4-13	.32	11-10	.38	11-9	.50	11-9	.52	11-9	.53
MAXIMUMS FOR PERIOD OF RECORD																
1937 TO 1967	5-1 1944	4.51	5-1 1944	2.99	5-1 1944	5.57	5-1 1944	6.91	5-1 1944	6.92	5-1 1944	7.05	4-30 1944	9.20	4-29 1944	11.06
NOTES: Watershed land use: 31% cotton; 3% corn; 18% oats; 17% row grain sorghum; 21% pasture; 3% gravel roads; 7% other. Approx. 90% of "other" is Johnsongrass and weeds, but neither tilled nor grazed. Straight row cultivation without terraces. 1/ Precipitation data from Thiessen method using rain gages 75A, 89, W-2, W-2A, and W-5A. 2/ Precipitation and runoff records began July 1937; part-year amounts not included in averages. 3/ Mean P based on 79-yr (1889-1967) U. S. Weather Bureau record period at Waco, Texas. 4/ No maximums for 1937.																
1967 SELECTED RUNOFF EVENT						RIESEL (WACO), TEXAS		WATERSHED W-1		42.06						
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL inches	RUNOFF inches	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
Event of April 13-14, 1967																
3-20	5 RG 5/ .46	.0000	4-13	RG	W-2		4-13	0448	.0000	.0000						
3-25	.14	.0000		0210	.00	.00		0456	.0015	.0001						
3-26	.34	.0000		0314	.12	.13		0500	.0397	.0010						
4-11	.70	.0000		0328	1.76	.54		0505	.1500	.0079						
				0344	1.13	.84		0510	.1859	.0226						
Watershed conditions: 31% cotton, 1 inch high; 3% corn, 12 to 18 inches high; 18% oats, beginning to head, 6 to 24 inches high; 17% row grain sorghum, 3 to 6 inches high; 21% pasture, bermudagrass, good cover, moderately grazed; 3% gravel roads; 7% Johnsongrass and weeds, not tilled or grazed. Straight row cultivation, not terraced.				0347	.60	.87		0516	.1776	.0407						
				0358	1.25	1.10		0525	.1365	.0638						
				0430	.04	1.12		0530	.1793	.0766						
				0500	1.36	1.80		0535	.2320	.0942						
				0508	.75	1.90		0539	.2392	.1099						
				0540	.38	2.10		0544	.2249	.1293						
				0700	.04	2.15		0550	.2005	.1506						
				0736	.00	2.15		0556	.1737	.1693						
				1100	.02	2.22		0601	.1566	.1831						
				RG	75A	2.32		0611	.1254	.2064						
				RG	89	2.27		0621	.0996	.2251						
				RG	W-2A	2.12		0638	.0661	.2484						
				RG	W-5A	2.26		0702	.0367	.2681						
				5 RG	AVG5/ 2.20			0732	.0234	.2827						
								0812	.0147	.2952						
							0902	.0086	.3048							
							1102	.0034	.3158							
							1400	.0013	.3222							
							1800	.0004	.3251							
							2400	.0001	.3263							
							4-14	1000	.0000	.3269						
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 177.47. FOR MAP OF THE WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1963, USDA MISC. PUB. 1164, P. 42.6-6 (REVISED). 5/ THIESSEN WEIGHTED RAINFALL USING RAIN GAGES 75A, 89, W-2, W-2A, AND W-5A.																



RIESEL (WACO), TEXAS

WATERSHED W-1

MONTHLY PRECIPITATION AND RUNOFF (inches)						RIESEL (WACO), TEXAS		AREA — 130 ACRES		WATERSHED W-2		42.07				
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	P ¹	.28	.43	1.11	4.42	3.60	.02	2.20	2.70	3.22	4.86	3.57	3.61	30.02		
	O	.01	T	.00	.21	.12	.01	.00	.00	.00	.10	.67	.83	1.95		
	STA A, O ² P	2.19	2.69	2.42	4.03	4.30	3.29	1.49	2.20	2.51	2.53	2.91	2.58	33.14		
	(35-67) O	.53	.70	.69	1.06	1.26	.52	.10	.06	.12	.17	.41	.56	6.18		
	MEAN P ³	2.13	2.37	2.74	4.23	4.61	3.24	1.89	1.93	2.89	2.59	2.50	2.56	33.68		
	79 YR															
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	4-13	.09	12-15	.06	12-15	.12	12-15	.30	12-15	.39	11-10	.57	11-9	.61	12-15	.63
MAXIMUMS FOR PERIOD OF RECORD																
1937 TO 1967	5-1	4.83	5-1	2.86	5-1	5.40	5-1	6.91	5-1	6.97	5-1	7.12	4-30	9.26	4-29	10.96
	1944		1944		1944		1944		1944		1944		1944		1944	
NOTES																
Watershed land use: 18% oats-clover, 17% row grain sorghum; 56% pasture; 5% gravel roads; 4% Johnsongrass, not tilled or grazed. Cropland farmed on contour, not terraced. Modified conservation applied 1956. 1/ Precipitation data from Thiessen method using rain gages W-2, W-4, W-5A, and W-6. 2/ Precipitation and runoff records began July 1937; part-year amounts not included in averages. 3/ Mean P based on 79-yr (1889-1967) U. S. Weather Bureau record period at Waco, Texas. 4/ No maximums for 1937.																
1967 SELECTED RUNOFF EVENT						RIESEL (WACO), TEXAS		WATERSHED W-2		42.07						
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
Event of December 15-16, 1967																
11-15	4 RG 5/	.0022	12-15	RG	W-6		12-15	0000	.0004	.0000						
11-16	.00	.0025		0000	.00	.00		0125	.0045	.0015						
11-17	.00	.0031		0100	.20	.20		0140	.0084	.0030						
11-18	.00	.0028		0115	.60	.35		0150	.0129	.0048						
11-19	.00	.0028		0122	.26	.38		0200	.0193	.0075						
11-20	.00	.0032		0130	.83	.49		0210	.0208	.0109						
11-21	.00	.0032		0150	.21	.56		0220	.0211	.0144						
11-22	.00	.0030		0220	.04	.58		0232	.0203	.0186						
11-23	.00	.0029		0320	.12	.70		0240	.0249	.0215						
11-24	.00	.0021		0355	.36	.91		0300	.0309	.0309						
11-25	.00	.0025		0430	.12	.98		0340	.0399	.0534						
11-26	.00	.0026		0450	.21	1.05		0350	.0449	.0605						
11-27	.36	.0060		0540	.10	1.13		0400	.0496	.0684						
11-28	.03	.0052		0610	.18	1.22		0410	.0525	.0769						
11-29	.06	.0051		0848	.06	1.39		0420	.0566	.0860						
11-30	.00	.0040		RG	W-2	1.32		0430	.0587	.0956						
12-01	.00	.0041		RG	W-5A	1.40		0440	.0621	.1057						
12-02	.07	.0041		RG	W-4	1.34		0500	.0619	.1263						
12-03	.00	.0031		4 RG	AVG 5/	1.37		0520	.0611	.1468						
12-04	.00	.0033						0600	.0570	.1858						
12-05	.20	.0055						0700	.0547	.2417						
12-06	.00	.0044						0800	.0440	.2917						
12-07	.00	.0037						0900	.0314	.3296						
12-08	.00	.0039						1100	.0153	.3739						
12-09	.00	.0039						1300	.0084	.3972						
12-10	.11	.0038						1600	.0040	.4147						
12-11	.00	.0033						2000	.0019	.4258						
12-12	.00	.0029						2400	.0012	.4318						
12-13	.25	.0049						2000	5/.0006	.4467						
12-14	Z/.30	.0067														
Watershed conditions: 18% Oats-clover, 2 to 6 inches high; 17% bedded, no crop; 56% pasture, bermudagrass, good cover, dormant; 4% Johnsongrass, not tilled or grazed; 5% gravel roads. Cropland farmed on contour, not terraced.																
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 131.08. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1963, USDA MISC. PUB. 1164, P. 42.7-5 (REVISED). 5/ THIESSEN WEIGHTED RAINFALL USING RAIN GAGES W-2, W-4, W-5A, AND W-6. 6/ NEXT EVENT BEGAN AT 2020, DEC. 16, 1967. 7/ RAINFALL ENDED AT 2320.																



RIESEL (WACO), TEXAS WATERSHED W-2

MONTHLY PRECIPITATION AND RUNOFF (inches)							RIESEL (WACO), TEXAS		WATERSHED W-6		42.05			
							AREA — 42.3 ACRES							
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1967	P ¹ / ₀	.30	.44	1.10	4.46	3.51	.03	2.33	2.29	3.10	4.99	3.53	3.56	29.64
	C	.00	.00	.00	.09	.00	.00	.00	.00	.00	.00	.20	.22	.51
STA AVG P (40-67)	P ² / ₀	2.02	2.62	2.26	4.10	4.01	3.45	1.39	2.28	2.65	2.71	2.93	2.41	32.83
	C	.29	.38	.41	.77	.84	.44	.06	.03	.10	.12	.32	.34	4.10
MEAN 79 YR	P ³ / ₀	2.13	2.37	2.74	4.23	4.61	3.24	1.89	1.93	2.89	2.59	2.50	2.56	33.68

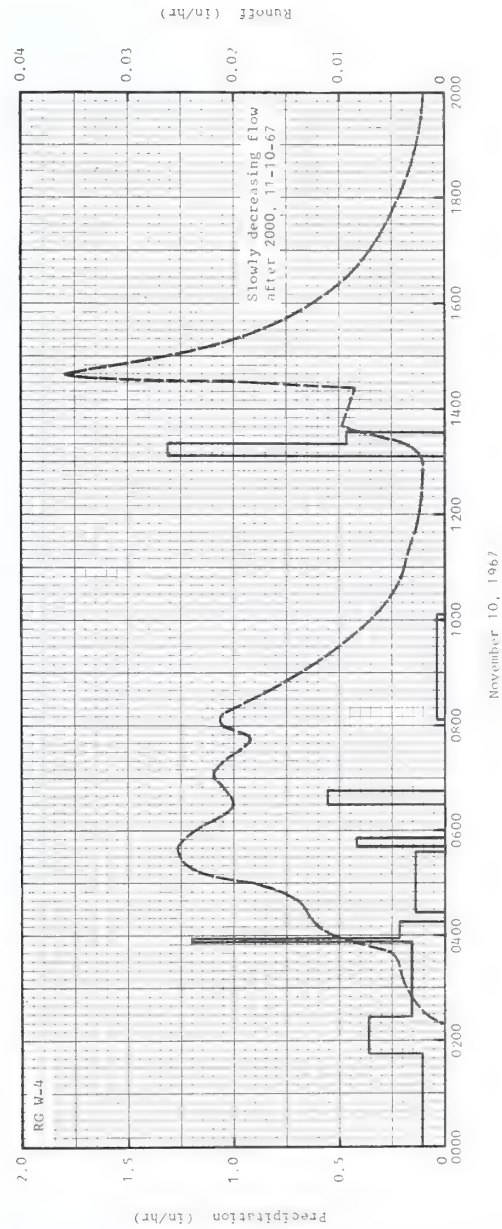
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	4-13	.09	4-13	.06	4-13	.08	4-13	.08	11-10	.16	11-10	.20	11-10	.20	11-10	.21

MAXIMUMS FOR PERIOD OF RECORD																
1939 TO 1967 ⁴ / ₀	6-10	3.99	4-19	2.33	4-19	2.78	5-11	3.13	5-11	3.21	3-29	4.06	11-22	5.09	4-19	9.06
	1941		1957		1957		1957		1957		1965		1940		1957	

NOTES: Watershed land use: 41% oats-clover; 24% row grain sorghum; 15% pasture; 7% gravel roads; 11% Johnsongrass and weeds, not tilled or grazed; 2% native grass waterways. Modified conservation program since 1956. Cropland farmed on contour, no terraces. 1/ Precipitation data obtained from rain gages W-2, W-4, and W-5A. 2/ Precipitation and runoff records began May 1939; station not in operation July 1943 to Jan. 1, 1946; part-year amounts not included in averages. 3/ Mean P based on 79-yr (1889-1967) U. S. Weather Bureau record period at Waco, Texas. 4/ Maximums for 1939 occurred after May 1, and for 1943 before July; no maximums for 1944 and 1945.

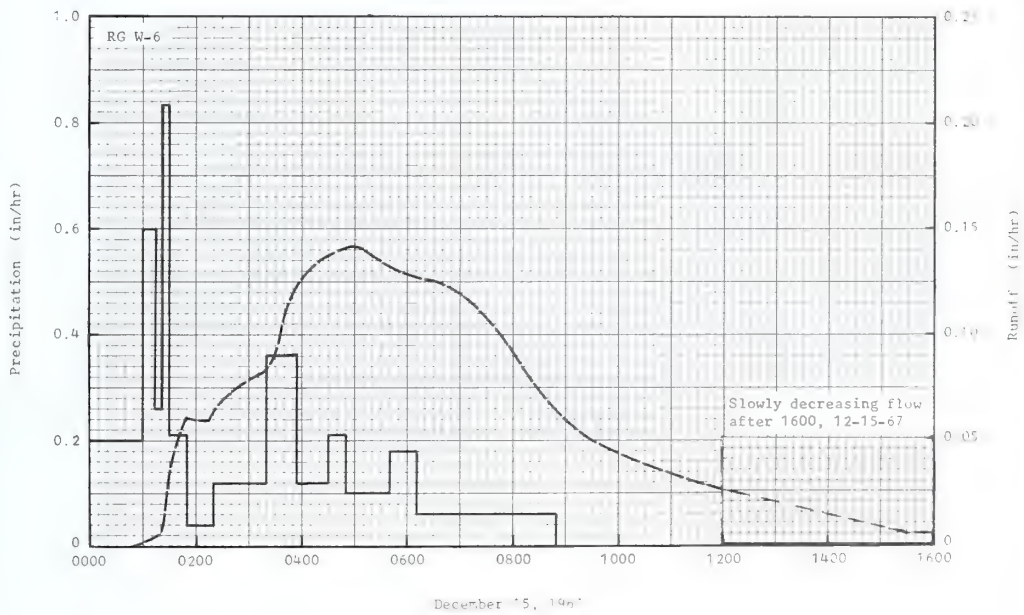
1967 SELECTED RUNOFF EVENT			RIESEL (WACO), TEXAS		WATERSHED W-6		42.08									
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
Event of November 10-11, 1967																
10-14	3 RG 5/ ₅	.0000	11-10	RG	W-4		11-10	0220	.0000	.0000						
10-15	1.53	.0000		0000	.00	.00		0230	.0017	.0001						
10-29	1.57	.0000		0146	.10	.17		0300	.0034	.0016						
10-30	.63	.0000		0228	.36	.42		0330	.0044	.0035						
10-31	.05	.0000		0351	.15	.63		0400	.0104	.0068						
11-08	.13	.0000		0356	1.20	.73		0430	.0133	.0131						
11-09	5/ _{1.31}	.0000		0416	.21	.80		0500	.0179	.0205						
Watershed conditions: 41% oats-clover, 3 inches high; 24% bedded, no crop; 15% pasture, bermudagrass, good cover, moderately grazed; 11% Johnsongrass and weeds, not tilled or grazed; 2% native grass waterways, dense cover; 7% gravel roads. Cropland farmed on contour, not terraced.				0426	.00	.80		0520	.0245	.0277						
				0536	.13	.95		0540	.0253	.0360						
				0541	.00	.95		0600	.0237	.0442						
				0551	.42	1.02		0630	.0200	.0551						
				0631	.00	1.02		0700	.0218	.0656						
				0646	.56	1.16		0740	.0184	.0790						
				0806	.00	1.16		0800	.0214	.0856						
				1006	.03	1.22		0810	.0214	.0892						
				1305	.00	1.22		0900	.0138	.1041						
				1320	1.32	1.55		1000	.0069	.1142						
				1334	.47	1.66		1103	.0039	.1197						
				RG	W-2	1.34		1303	.0020	.1255						
				RG	W-5A	1.60		1313	.0025	.1258						
				3 RG	AVG 5/ ₅	1.63		1338	.0099	.1281						
								1423	.0086	.1349	11-11	2400	.0006	.1955		
								1428	.0184	.1358		0903	.0000	.1978		
								1433	.0299	.1380						
								1439	.0358	.1414						
								1453	.0295	.1489						
								1523	.0187	.1609						
								1633	.0088	.1758						
								1803	.0043	.1851						
								2003	.0018	.1909						

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 42.652. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1963, USDA MISC. PUB. 1164, P. 42.7-5, (REVISED). 5/ THIESSEN WEIGHTED RAINFALL USING RAIN GAGES W-2, W-4, AND W-5A. 6/ RAINFALL ENDED AT 2336.



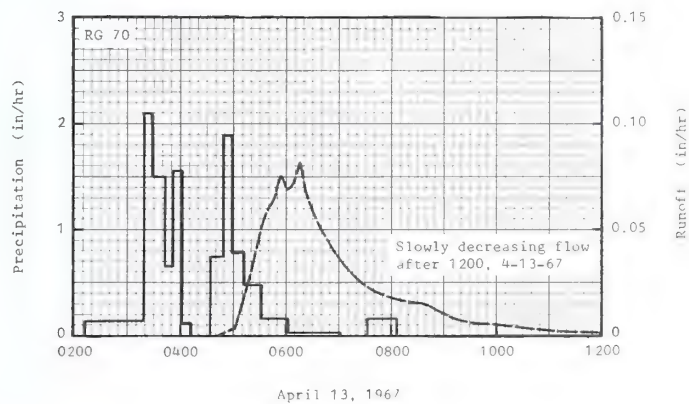
RIESEL (WACO), TEXAS WATERSHED W-6

MONTHLY PRECIPITATION AND RUNOFF (inches)						RIESEL (WACO), TEXAS		WATERSHED W-10		42.10						
						AREA — 19.7 ACRES										
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	P1	.26	.41	1.12	4.33	3.71	.01	2.10	3.20	3.35	4.74	3.66	3.64	30.53		
	O	.00	.00	.00	.65	.33		.00	.00	.00	.72	1.58	1.32	4.60		
STA AVO P	P2	2.04	2.65	2.16	4.03	3.91	3.39	1.36	2.38	2.57	2.73	2.89	2.40	32.51		
	O	.42	.46	.41	.94	.90	.52	.07	.10	.21	.27	.46	.44	5.20		
MEAN	P2															
70 YR		2.13	2.37	2.74	4.23	4.61	3.24	1.89	1.93	2.89	2.59	2.50	2.56	33.68		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	4-13	.37	4-13	.25	4-13	.40	11-10	.73	11-10	.99	11-9	1.54	11-9	1.58	11-9	1.55
MAXIMUMS FOR PERIOD OF RECORD																
1935-1967	6-10	5.01	4-10	2.37	4-19	2.55	5-11	3.00	11-22	3.33E	11-22	3.53E	4-24	5.16	5-19	8.29
1967	1941		1957		1957		1957		1940		1940		1966		1957	
NOTES																
Watershed land use: 100% Coastal Bermudagrass for pasture. Good cover, moderately grazed, terraced. 1/ Precipitation data obtained from rain gage W-6. 2/ Precipitation and runoff records began Aug. 1938; station not in operation July 1943 to May 3, 1944; part-year amounts not included in averages. 3/ Mean P based on 79-yr (1889-1967) U. S. Weather Bureau record period at Waco, Texas. 4/ Maximums for 1943 occurred before July, and for 1946 after May 3; no maximums for 1938, 1944, and 1945.																
1967 SELECTED RUNOFF EVENT						RIESEL (WACO), TEXAS		WATERSHED W-10		42.10						
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
Event of December 15-16, 1967																
RG W-6			RG			W-6										
11-27	.37	.0000	12-15	0000	.00	.00	12-15	0050	.0000	.0000						
11-28	.02	.0000		0100	.20	.20		0110	.0034	.0002						
11-29	.06	.0000		0115	.60	.35		0120	.0052	.0009						
12-02	.05	.0000		0122	.26	.38		0130	.0292	.0037						
				0122	.26	.38		0140	.0502	.0101						
12-05	.21	.0000		0130	.83	.49		0150	.0604	.0195						
12-10	.10	.0000		0150	.21	.56		0200	.0595	.0295						
12-13	.25	.0000		0220	.04	.58		0215	.0581	.0442						
12-14	5/.27	.0000		0320	.12	.70		0245	.0753	.0781						
Watershed conditions: 100% Coastal Bermudagrass pasture, dormant, 2 to 4 inches high, good cover.				0355	.36	.91		0315	.0820	.1182						
				0430	.12	.98		0335	.0987	.1473						
				0450	.21	1.05		0345	.1145	.1650						
				0540	.10	1.13		0400	.1265	.1952						
				0610	.18	1.22		0430	.1368	.2610						
				0848	.06	1.39		0500	.1417	.3306						
								0530	.1352	.3998						
								0600	.1250	.4656						
								0700	.1189	.5906						
								0800	.0910	.6968						
								0900	.0595	.7702						
								1000	.0441	.8229						
								1152	.0263	.8853						
								1252	.0203	.9079						
								1422	.0117	.9313						
								1652	.0063	.9531						
								1952	.0035	.9674						
								2400	.0018	.9776						
								12-16	5/.0002	.9864						
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 19.864. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1963, USDA MISC. PUB. 1164, P. 42.7-5 (REVISED). 5/ RAINFALL ENDED AT 2320. 6/ NEXT EVENT BEGAN AT 2020 DEC. 16, 1967.																



RIESEL (WACO), TEXAS WATERSHED W-10

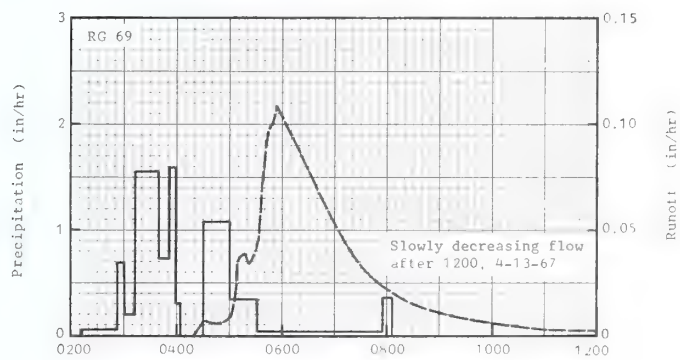
MONTHLY PRECIPITATION AND RUNOFF (inches)						RIESEL (WACO), TEXAS		WATERSHED Y		42.11						
						AREA — 309 ACRES										
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967	.26	.37	1.18	4.43	3.50	.34	2.06	2.60	3.51	5.06	3.47	3.63	30.41			
	T	T	T	.20	.02	T	.00	.00	.00	.00	.32	.48	1.02			
STA AVG P (38-67)	2.15	2.60	2.19	3.95	3.91	3.50	1.38	2.12	2.46	2.57	2.75	2.39	31.97			
MEAN 79 YR	.44	.50	.41	.77	.72	.46	.07	.05	.11	.10	.33	.32	4.28			
	2.13	2.37	2.74	4.23	4.61	3.24	1.89	1.93	2.89	2.59	2.50	2.56	33.68			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	4-13	.08	4-13	.07	4-13	.11	4-13	.16	12-15	.24	11-9	.31	11-9	.32	12-15	.42
MAXIMUMS FOR PERIOD OF RECORD																
1937 TO 1967	4-19 1957	2.54E	4-19 1957	2.15E	4-19 1957	2.74E	4-19 1957	3.48E	4-19 1957	3.66E	3-29 1965	3.98	11-22 1940	4.77	4-19 1957	9.36E
NOTES: Watershed land use: 42% pasture; 15% oats-clover; 14% cotton; 17% row grain sorghum; 3% corn; 8% Johnsongrass and weeds, not tilled or grazed; 1% gravel roads. Cropland terraced, contour cultivation. No change in conservation practices. 1/ Precipitation data from Thiessen method using rain gages 69, 69B, 70, 75A, 84A, 89, and W-2A. 2/ Precipitation and runoff records began May 1937; station not in operation July 1943 to May 1, 1946; part-year amounts not included in averages. 3/ Mean P based on 79-yr (1889-1967) U. S. Weather Bureau record period at Waco, Texas. 4/ Maximums for 1943 occurred before July, and for 1946 after May 1; no maximums for 1937, 1944, and 1945.																
1967 SELECTED RUNOFF EVENT						RIESEL (WACO), TEXAS		WATERSHED Y		42.11						
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
			Event of April 13-14, 1967													
3-20	7 RG 5/ .48	.0000	4-13	RG	.70		4-13	0443	.0000	.0000						
3-25	.18	.0000		0213	.00	.00		0503	.0035	.0005						
3-26	.33	.0000		0319	.15	.16		0510	.0157	.0015						
4-11	.67	.0000		0327	2.10	.44		0520	.0282	.0050						
Watershed conditions: 42% pasture, bermudagrass and native grass, good cover, moderately grazed; 15% oats-clover, beginning to head, 6 to 24 inches high; 14% cotton, 1 inch high; 17% row grain sorghum, 3 to 6 inches high; 3% corn, 12 to 18 inches high; 8% Johnsongrass and weeds, not tilled or grazed; 1% gravel roads. Cropland terraced, cultivated on contour.				0343	1.50	.84		0530	.0472	.0114						
				0353	.66	.95		0540	.0611	.0207						
				0403	1.56	1.21		0545	.0619	.0258						
				0413	.12	1.23		0550	.0723	.0314						
				0433	.00	1.23		0555	.0752	.0375						
				0449	.75	1.43		0600	.0690	.0436						
				0457	1.88	1.68		0605	.0699	.0493						
				0513	.79	1.89		0610	.0736	.0553						
				0533	.48	2.05		0615	.0826	.0618						
				0603	.16	2.13		0620	.0736	.0683						
				0703	.01	2.14		0630	.0599	.0795						
				0733	.00	2.14		0640	.0495	.0886						
				0805	.15	2.22		0650	.0431	.0963						
				RG	.69	2.18		0710	.0329	.1088						
				RG	69B	2.02		0740	.0229	.1227						
				RG	75A	2.32		0820	.0158	.1354						
				RG	84A	2.25		0900	.0109	.1443						
				RG	89	2.27		1000	.0063	.1526						
				RG	W-2A	2.12		1058	.0041	.1575						
				7 RG	AVG5/	2.23		1258	.0019	.1632						
								1558	.0008	.1671						
									2000	.0003	.1690					
									2400	.0001	.1698					
									1200	.0000	.1708					
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 311.57. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1964, USDA MISC. PUB. 1194, P. 42.11-5 (REVISED). 5/ THIESSEN WEIGHTED RAINFALL USING RAIN GAGES 69, 69B, 70, 75A, 84A, 89, AND W-2A.																



RIESEL (WACO), TEXAS

WATERSHED Y

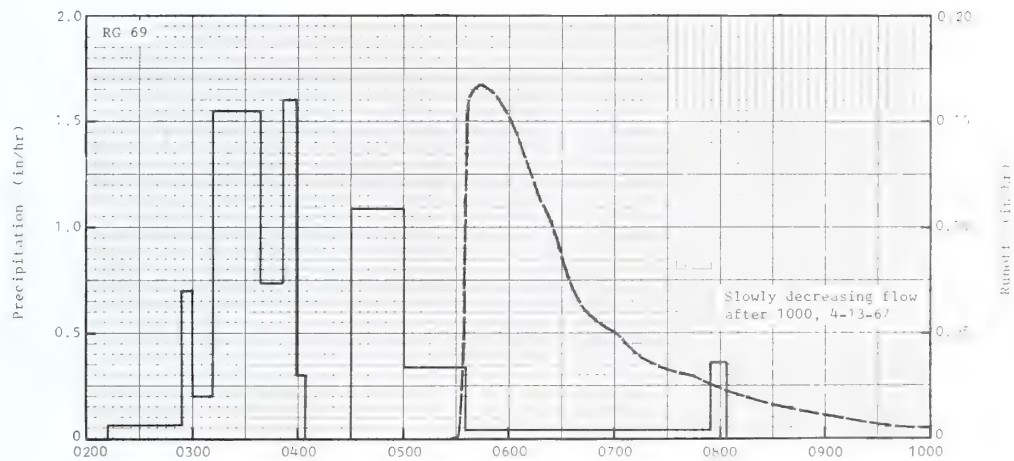
MONTHLY PRECIPITATION AND RUNOFF (inches)						RIESE (WACO), TEXAS		AREA — 132 ACRES		WATERSHED Y-2		42.12						
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL				
1967	P ¹ / _Q	.26 .00	.37 .00	1.17 .00	4.34 .24	3.50 T	.31 .00	2.18 .00	2.40 .00	3.49 .00	5.20 T	3.44 .34	3.65 .41	30.31 .99				
STA AVG P (39-67) Q		2.16 .40	2.64 .57	2.47 .61	4.00 .93	4.45 1.13	3.41 .47	1.46 .07	2.14 .05	2.58 .10	2.56 .12	2.94 .35	2.55 .45	33.36 5.25				
MEAN P ² / _Q 79 YR		2.13	2.37	2.74	4.23	4.61	3.24	1.89	1.93	2.89	2.59	2.50	2.56	33.68				
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																		
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL															
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS			
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME		
1967	4-13	.11	4-13	.09	4-13	.14	4-13	.20	12-15	.25	11-9	.34	11-9	.34	12-15	.38		
MAXIMUMS FOR PERIOD OF RECORD																		
1939 TO 1967	5-1 1944	4.07	5-1 1944	3.11	5-1 1944	5.47	5-1 1944	7.08	5-1 1944	7.26	5-1 1944	7.46	4-30 1944	9.64	4-29 1944	10.60		
NOTES																		
Watershed land use: 33% pasture; 26% row grain sorghum; 19% cotton; 21% oats-clover; 1% gravel roads. Cropland terraced; contour cultivation; conservation treatment since 1942. ¹ / Precipitation data from Thiessen method using rain gauges 69, 69B, 70, 75A, and 84A. ² / Precipitation and runoff records began Jan. 1, 1939. ³ / Mean P based on 79-yr (1889-1967) U. S. Weather Bureau record period at Waco, Texas.																		
1967 SELECTED RUNOFF EVENT						RIESEL (WACO), TEXAS				WATERSHED Y-2				42.12				
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF											
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)								
Event of April 13, 1967																		
3-20	5 RG 4/ .48	.0000	4-13	RG	.69		4-13	0422	.0000	.0000								
3-25	.18	.0000		0212	.00	.00		0425	.0035	.0000								
3-26	.31	.0000		0254	.07	.05		0431	.0074	.0007								
4-11	.64	.0000		0300	.70	.12		0435	.0070	.0012								
Watershed conditions: 33% pasture, bermudagrass and native grass, good cover, moderately grazed; 26% row grain sorghum, 3 to 6 inches high; 19% cotton, 1 inch high; 21% oats-clover, beginning to head, 6 to 24 inches high; 1% gravel roads. Cropland terraced, cultivated on contour.				0312	.20	.16		0439	.0062	.0016								
				0338	1.55	.83		0448	.0065	.0026								
				0352	.73	1.00		0504	.0083	.0046								
				0358	1.60	1.16		0508	.0358	.0060								
				0404	.30	1.19		0517	.0378	.0115								
				0430	.00	1.19		0525	.0328	.0161								
				0500	1.08	1.73		0530	.0404	.0193								
				0534	.34	2.02		0535	.0465	.0229								
				0754	.04	2.12		0540	.0860	.0286								
				0804	.36	2.18		0545	.0976	.0363								
				RG	69B	2.02		0551	.1001	.0462								
				RG	70	2.22		0554	.1088	.0514								
				RG	75A	2.32		0557	.1051	.0567								
				RG	84A	2.25		0602	.1021	.0654								
				5 RG	AVG 4/	2.19		0612	.0937	.0816								
											0622	.0851	.0965					
											0632	.0763	.1101					
											0642	.0677	.1220					
											0702	.0504	.1418					
											0727	.0340	.1589					
											0747	.0252	.1687					
											0817	.0170	.1790					
											0847	.0111	.1859					
											0927	.0075	.1919					
											1031	.0043	.1980					
											1201	.0023	.2027					
											1601	.0006	.2078					
											2400	.0000	.2094					
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 133.10. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1964, USDA MISC. PUB. 1194, P. 42.11-5 (REVISED). ⁴ / THIESSEN WEIGHTED RAINFALL USING RAIN GAGES 69, 69B, 70, 75A, AND 84A.																		



April 13, 1967

RIESEL (WACO), TEXASWATERSHED Y-2

MONTHLY PRECIPITATION AND RUNOFF (inches)						RIESEL (WACO), TEXAS		WATERSHED Y-4		42.13						
						AREA — 79.9 ACRES										
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967	.26	.36	1.15	4.21	3.46	.28	2.30	2.29	3.51	5.27	3.42	3.79	30.30			
MEAN	.00	.00	.00	.27	T	.00	.00	.00	.00	T	.44	.53	1.24			
STA AVG	2.10	2.60	2.23	3.92	4.15	3.50	1.36	2.15	2.64	2.62	2.91	2.38	32.56			
(39-67)	.34	.45	.41	.76	.90	.50	.08	.07	.12	.13	.35	.31	4.42			
79 YR	2.13	2.37	2.74	4.23	4.61	3.24	1.89	1.93	2.89	2.59	2.50	2.56	33.68			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	
1967	4-13	.17	4-13	.13	4-13	.18	4-13	.23	11-10	.32	11-10	.43	11-10	.44	12-15	.49
MAXIMUMS FOR PERIOD OF RECORD																
1939 TO 1967	6-10	3.12	4-19	2.16	4-19	2.85	3-29	3.34	3-29	3.53	3-29	3.96	4-23	5.12	4-19	9.46
1967	1941		1957		1957		1965		1965		1965		1957		1957	
NOTES Watershed land use: 29% cotton; 9% oats-clover; 30% row grain sorghum; 31% pasture; 1% gravel roads. Cropland terraced and contour tilled; no change in conservation practices. 1/ Precipitation data from Thiessen method using rain gages 69, 69B, 75A, and 84A. 2/ Precipitation and runoff records began Jan. 1, 1939; station not in operation July 1943 to Jan. 1, 1946; part-year amounts not included in averages. 3/ Mean P based on 79-yr (1889-1967) U. S. Weather Bureau record period at Waco, Texas. 4/ Maximums for 1943 occurred before July; no maximums for 1944 and 1945.																
1967 SELECTED RUNOFF EVENT				RIESEL (WACO), TEXAS				WATERSHED Y-4				42.13				
ANTECEDENT CONDITIONS			RAINFALL			RUNOFF										
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
4 RG5/			Event of April 13, 1967				4-13									
3-20	.47	.0000	4-13	RG	.69		4-13	0526	.0000	.0000						
3-25	.18	.0000		0212	.00	.00		0530	.0003	.0000						
3-26	.30	.0000		0254	.07	.05		0533	.0678	.0006						
4-11	.60	.0000		0300	.70	.12		0537	.1591	.0101						
				0312	.20	.16		0539	.1660	.0155						
Watershed conditions: 29% cotton, 1 inch high; 9% oats-clover, beginning to head, 6 to 24 inches high; 30% row grain sorghum, 3 to 6 inches high; 31% pasture, bermuda-grass and native grass, good cover, moderately grazed; 1% gravel roads. Cropland terraced, cultivated on contour.			0338	1.55	.83	0547	.1660	.0376								
			0352	.73	1.00	0551	.1638	.0486								
			0358	1.60	1.16	0554	.1586	.0567								
			0404	.30	1.19	0559	.1518	.0696								
			0430	.00	1.19	0604	.1406	.0818								
			0500	1.08	1.73	0609	.1302	.0931								
			0534	.34	2.02	0614	.1178	.1034								
			0754	.04	2.12	0619	.1090	.1129								
			0804	.36	2.18	0629	.0867	.1292								
			RG	69B	2.02	0639	.0656	.1418								
			RG	75A	2.32	0649	.0546	.1515								
			RG	84A	2.25	0659	.0504	.1602								
			4 RG	AVG5/	2.12	0709	.0428	.1680								
						0721	.0366	.1759								
						0741	.0303	.1871								
						0821	.0175	.2030								
						0901	.0116	.2126								
						1001	.0063	.2213								
						1103	.0033	.2261								
						1303	.0016	.2307								
						1603	.0003	.2333								
						2003	.0001	.2339								
						2203	.0000	.2340								
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 80.565. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1964, USDA MISC. PUB. 1194, P. 42.11-5 (REVISED). 5/ THIESSEN WEIGHTED RAINFALL USING RAIN GAGES 69, 69B, 75A, AND 84A.																



April 13, 1967

RIESEL (WACO), TEXAS

WATERSHED Y-4

MONTHLY PRECIPITATION AND RUNOFF (inches)						RIESEL(WACO), TEXAS		WATERSHED Y-6		42.14				
						AREA — 16.3 ACRES								
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1967	1	.24	.36	1.13	4.24	3.51	.28	2.22	2.28	3.49	5.26	3.43	3.68	30.12
	2	.00	.00	.00	.35	.00	.00	.00	.00	.00	.00	.15	.16	.66
STA A.V.G P (39-67)	1	2.00	2.68	2.08	3.99	3.93	3.67	1.40	2.19	2.59	2.77	2.89	2.34	32.53
	2	.25	.35	.28	.69	.78	.51	.08	.05	.11	.23	.36	.29	3.98
MEAN 79 YR	1	2.13	2.37	2.74	4.23	4.61	3.24	1.89	1.93	2.89	2.59	2.50	2.56	33.68

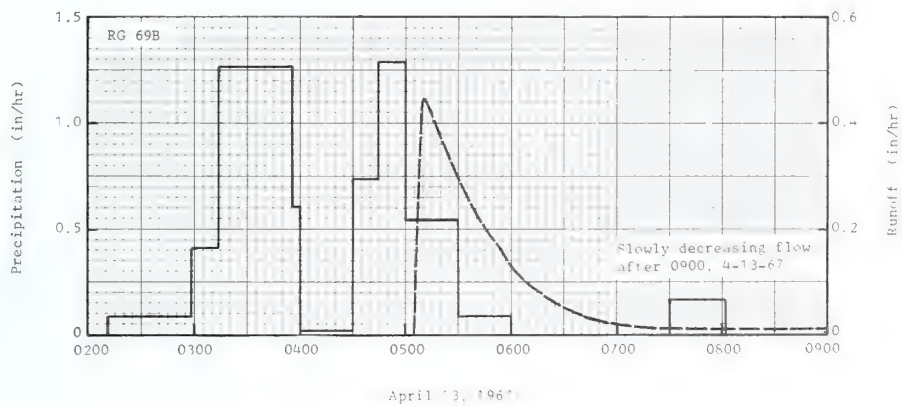
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	4-13	.44	4-13	.26	4-13	.31	4-13	.33	4-13	.33	4-13	.33	4-13	.33	4-13	.35

MAXIMUMS FOR PERIOD OF RECORD																
1939 TO 1967	6-10	3.79	3-29	1.90	3-29	2.34	3-29	2.95	3-29	3.13	3-29	3.67	11-22	4.87	4-19	8.49
	1941		1965		1965		1965		1965		1965		1940		1957	

NOTES: Watershed land use: 93% cotton, 5% pasture; 2% gravel roads. Cropland terraced and contour tilled; no change in conservation practices. 1/ Precipitation data from Thiessen method using rain gages 69B and 75A. 2/ Precipitation and runoff records began Jan. 1939; station not in operation July 1943 to May 1, 1947; part-year amounts not included in averages. 3/ Mean P based on 79-yr (1889-1967) U. S. Weather Bureau record period at Waco, Texas. 4/ Maximums for 1943 occurred before July; no maximums 1944 through 1947.

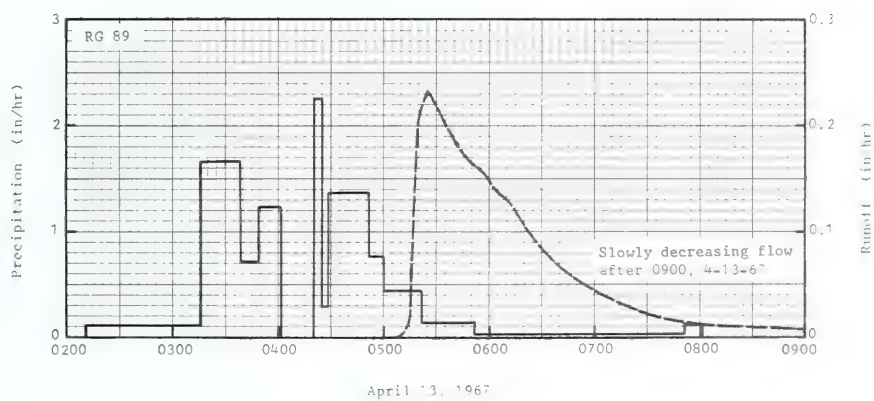
1967 SELECTED RUNOFF EVENT						RIESEL (WACO), TEXAS		WATERSHED Y-6		42.14	
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)	
Event of April 13, 1967											
3-20	2 RG5/ .46	.0000	4-13	RG	69B		4-13	0504	.0000	.0000	
3-25	.18	.0000		0212	.00	.00	0505	.0001	.0000		
3-26	.29	.0000		0258	.08	.06	0506	.1178	.0010		
4-11	.64	.0000		0314	.41	.17	0507	.3158	.0046		
				0356	1.27	1.06	0508	.4094	.0106		
				0400	.60	1.10	0509	.4310	.0176		
				0430	.02	1.11	0510	.4420	.0249		
				0444	.73	1.28	0515	.4064	.0603		
				0500	1.28	1.62	0520	.3713	.0927		
				0530	.54	1.89	0525	.3288	.1218		
				0600	.08	1.93	0530	.2969	.1479		
				0730	.00	1.93	0535	.2648	.1713		
				0802	.17	2.02	0540	.2286	.1919		
				RG	75A	2.32	0545	.2044	.2099		
				2 RG	AVG5/	2.10	0550	.1828	.2261		
Watershed conditions: 93% cotton, 1 inch high; 5% pasture, bermudagrass, good cover, moderately grazed; 2% gravel roads. Cropland terraced, cultivated on contour.											
							0555	.1577	.2402		
							0600	.1298	.2522		
							0605	.1097	.2622		
							0610	.0947	.2707		
							0615	.0805	.2780		
							0625	.0560	.2894		
							0635	.0423	.2976		
							0645	.0312	.3037		
							0700	.0195	.3101		
							0715	.0140	.3143		
							0730	.0099	.3173		
							0745	.0086	.3196		
							0800	.0070	.3215		
							0830	.0042	.3243		
							0900	.0032	.3262		
							1000	.0016	.3285		
							1159	.0005	.3304		
							1359	.0001	.3311		
							1801	.0000	.3313		

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 16.436. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1964, USDA MISC. PUB.1194 , P. 42.11-5 (REVISED). 5/ THIESSEN WEIGHTED RAINFALL USING RAIN GAGES 69B AND 75A.

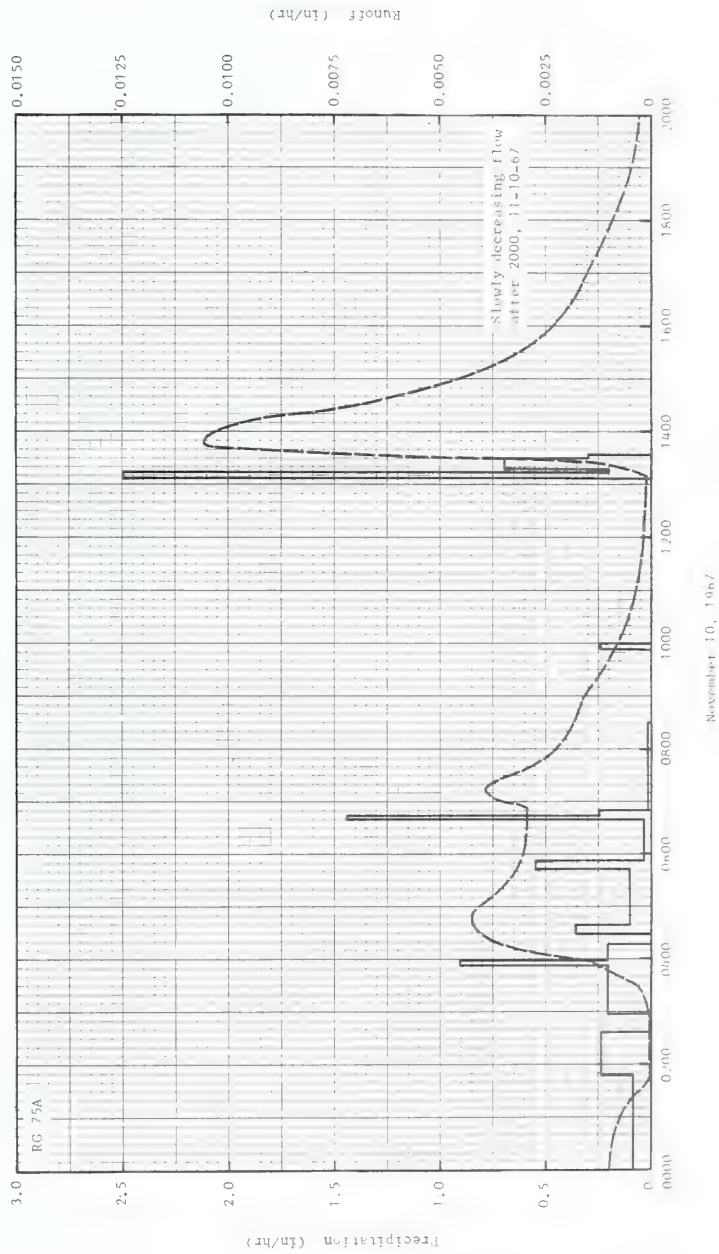


RIESEL (WACO), TEXAS WATERSHED Y-6

MONTHLY PRECIPITATION AND RUNOFF (inches)						RIESEL (WACO), TEXAS		WATERSHED Y-7		42.15						
						AREA — 40.0 ACRES										
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967	.24	.37	1.16	4.54	3.60	.24	2.06	2.74	3.49	4.95	3.38	3.62	30.39			
Q	.00	.00	.00	.28	.09	.00	.00	.00	.00	.00	.53	.36	1.26			
STA AVG P	2.02	2.72	2.12	4.07	3.96	3.61	1.39	2.23	2.55	2.79	2.94	2.36	32.76			
(39-67)	.27	.45	.40	.87	.93	.57	.07	.12	.17	.21	.46	.37	4.89			
MEAN	2.13	2.37	2.74	4.23	4.61	3.24	1.89	1.93	2.59	2.59	2.50	2.56	33.68			
79 YR	2.13	2.37	2.74	4.23	4.61	3.24	1.89	1.93	2.59	2.59	2.50	2.56	33.68			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	4-13	.23	4-13	.7	4-13	.24	4-13	.27	11-10	.43	11-10	.53	11-10	.53	11-10	.53
MAXIMUMS FOR PERIOD OF RECORD																
1939 TO 1967	6-10	3.59	4-19	2.34	3-29	2.96	3-29	3.58	3-29	3.84	3-29	4.66	11-22	5.37	4-19	8.89
	1941		1957		1965		1965		1965		1965		1940		1957	
NOTES: Watershed land use: 52% pasture; 48% Johnsongrass and weeds, not tilled or grazed. Cropland terraced. 1/ Precipitation data from Thiessen method using rain gages 89 and W-2A. 2/ Precipitation and runoff records began Jan. 1939; station not in operation from July 1943 to May 1, 1947; part-year amounts not included in averages. 3/ Mean P based on 79-yr (1889-1967) U. S. Weather Bureau record period at Waco, Texas. 4/ Maximums for 1943 occurred before July; no maximums for 1944 through 1947.																
1967 SELECTED RUNOFF EVENT						RIESEL (WACO), TEXAS		WATERSHED Y-7		42.15						
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE	RAINFALL	RUNOFF	DATE	TIME	INTENSITY	ACC.	DATE	TIME	RATE	ACC.						
MO-DAY	(inches)	(inches)	MO-DAY	OF DAY	(in/hr)	(inches)	MO-DAY	OF DAY	(in/hr)	(inches)						
Event of April 13, 1967																
3-20	2 RGS/		4-13	RG	.89		4-13	0505	.0000	.0000						
3-25	.47	.0000		0211	.00	.00		0510	.0027	.0000						
3-26	.11	.0000		0316	.12	.13		0515	.0257	.0011						
4-11	.38	.0000		0338	1.66	.74		0520	.2057	.0140						
	.68	.0000		0348	.72	.86		0524	.2315	.0287						
Watershed conditions: 52% pasture, bermudagrass, fair cover, moderately grazed; 48% Johnsongrass and weeds, not tilled or grazed. Cropland terraced.				0402	1.24	1.15		0526	.2315	.0364						
				0420	.00	1.15		0533	.2103	.0623						
				0424	2.25	1.30		0543	.1768	.0944						
				0428	.30	1.32		0555	.1598	.1282						
				0452	1.38	1.87		0611	.1306	.1672						
				0500	.75	1.97		0631	.0822	.2025						
				0522	.44	2.13		0701	.0431	.2330						
				0552	.14	2.20		0726	.0234	.2471						
				0752	.03	2.25		0801	.0130	.2573						
				0802	.12	2.27		0901	.0058	.2659						
				RG	W-2A	2.12		1031	.0025	.2718						
				2 RG	AVG5/	2.26		1302	.0007	.2753						
								1602	.0001	.2762						
								1947	.0000	.2763						
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 40.333. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1964, USDA MISC. PUB. 1194, P. 42.11-5 (REVISED). 5/ THIESSEN WEIGHTED RAINFALL USING RAIN GAGES 89 AND W-2A.																

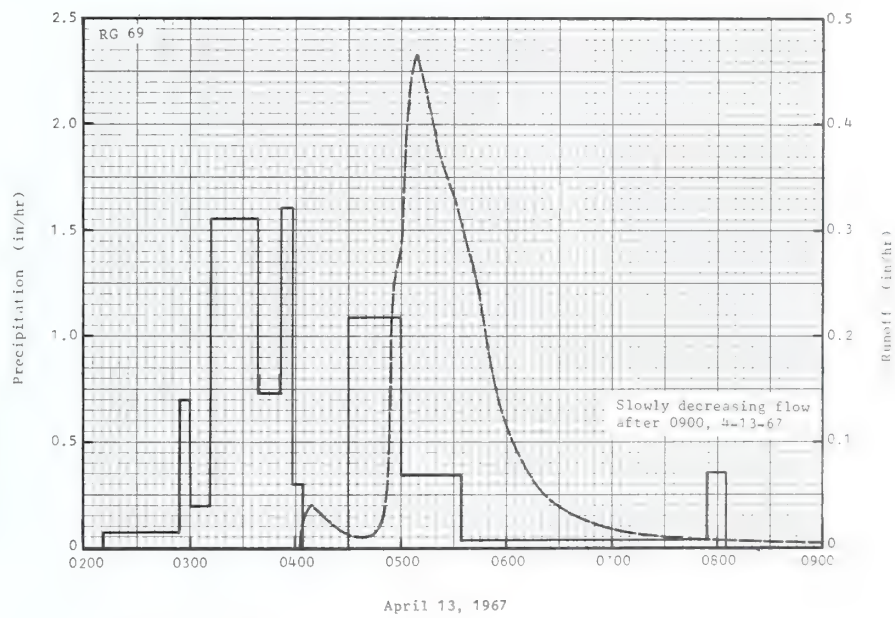
RIESEL (WACO), TEXASWATERSHED Y-7

MONTHLY PRECIPITATION AND RUNOFF (inches)						RIESEL (WACO), TEXAS		AREA — 20.5 ACRES		WATERSHED Y-8		42.16				
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967	.25	.37	1.22	4.60	3.64	.31	2.00	2.49	3.39	5.15	3.40	3.24	30.06			
P1	.00	.00	.00	.01	T	.00	.00	.00	.00	.00	.04	.06	.11			
2/ STA AVG P	1.90	2.69	2.18	4.09	3.84	3.80	1.44	2.24	2.70	2.89	2.97	2.38	33.12			
(40-67) 3/	.27	.39	.34	.51	.82	.51	.07	.07	.15	.14	.42	.32	4.31			
MEAN 79 YR	2.13	2.37	2.74	4.23	4.61	3.24	1.89	1.93	2.89	2.59	2.50	2.56	33.68			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	4-13	.02	4-13	.01	4-13	.01	11-10	.02	11-10	.03	11-10	.04	11-10	.04	12-15	.06
MAXIMUMS FOR PERIOD OF RECORD																
1939 TO	6-10	3.29	4-19	2.41	4-19	2.80	4-23	3.32	4-23	3.37	3-29	3.59	11-22	5.64	4-19	9.10
19 67 4/	1941		1957		1957		1957		1957		1965		1940		1957	
NOTES																
Watershed land use: 95% oats-clover; 3% pasture; 2% gravel roads. Cropland terraced and contour tilled; no change in conservation practices. 1/ Precipitation data obtained from rain gage 75A. 2/ Precipitation and runoff records began Mar. 1, 1939; station not in operation July 1943 to Jan. 1, 1949; part-year amounts not included in averages. 3/ Mean P based on 79-yr (1889-1967) U. S. Weather Bureau record period at Waco, Texas. 4/ Maximums for 1939 occurred after Mar. 1; maximums for 1943 occurred before July; no maximums 1944 through 1948.																
1967 SELECTED RUNOFF EVENT						RIESEL (WACO), TEXAS		WATERSHED Y-8		42.16						
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
Event of November 10-11, 1967																
10-14	RG 75A .48	.0000	11-10	RG	75A		11-10	0000	.0010	.0000						
10-15	1.60	.0000		0000	.00	.00		0146	.0000	.0006						
10-29	1.60	.0000		0148	.08	.15		0336	.0004	.0011						
10-30	.65	.0000		0238	.23	.34		0346	.0009	.0012						
				0258	.00	.34		0356	.0013	.0014						
10-31	.07	.0000		0354	.21	.54		0401	.0018	.0015						
11-08	.10	.0000		0358	.90	.60		0416	.0034	.0021						
11-09	5/1.26	.0008		0418	.21	.67		0431	.0041	.0031						
				0428	.00	.67		0501	.0041	.0051						
				0438	.36	.73		0601	.0030	.0085						
				0543	.10	.84		0651	.0028	.0109						
				0553	.54	.93		0701	.0037	.0115						
				0638	.03	.95		0721	.0037	.0127						
				0643	1.44	1.07		0801	.0022	.0147						
				0648	.24	1.09		0901	.0016	.0166						
				0828	.02	1.12		1030	.0005	.0180						
				0953	.00	1.12		1307	.0001	.0189						
				0958	.24	1.14		1315	.0004	.0189						
				1306	.00	1.14		1320	.0010	.0190						
				1312	2.50	1.39		1325	.0018	.0191						
				1315	.20	1.40		1330	.0042	.0193						
				1328	.69	1.55		1335	.0071	.0198						
				1334	.30	1.58		1340	.0093	.0205						
								1345	.0106	.0213						
								1400	.0102	.0239						
								1420	.0082	.0270						
								1500	.0045	.0311						
								1600	.0023	.0343						
								1700	.0015	.0362						
								1900	.0004	.0381						
								2400	.0001	.0392						
								1800	.0000	.0397						
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 20.973. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1964, USDA MISC. PUB. 1194, P. 42.11-5 (REVISED). 5/ RAINFALL ENDED AT 2340.																



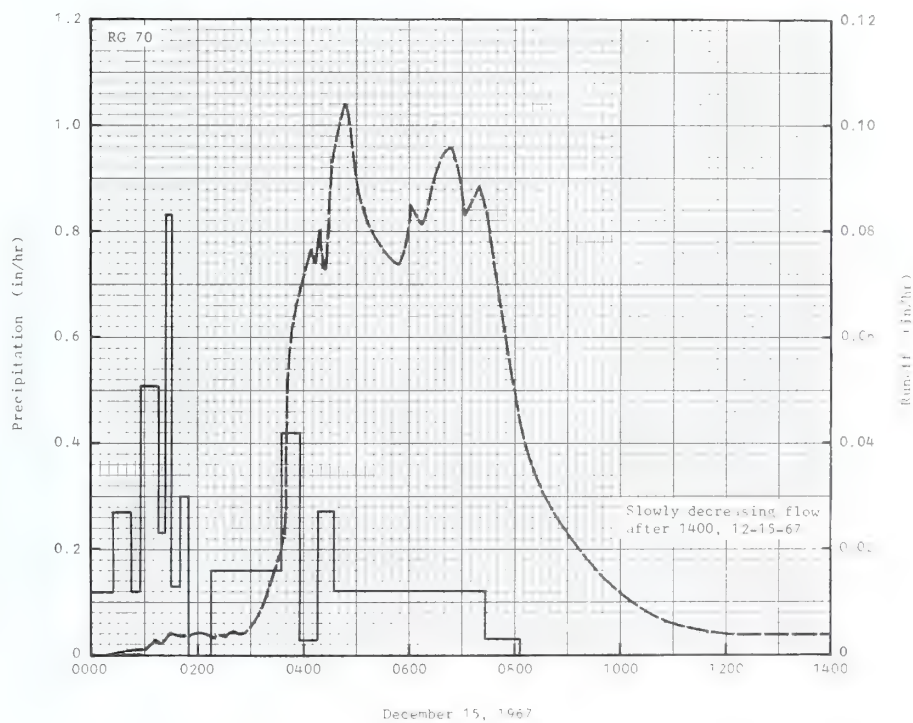
RIESEL (WACO), TEXAS WATERSHED Y-8

MONTHLY PRECIPITATION AND RUNOFF (inches)							RIESEL (WACO), TEXAS		AREA — 18.6 ACRES		WATERSHED Y-10		42.17			
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	P ^{2/}	.26	.36	1.13	4.22	3.43	.27	2.36	2.24	3.52	5.30	3.42	3.89	30.40		
	Q	.00	.00	.00	.51	I	.00	.00	.00	.00	.16	1.15	.65	2.47		
STA AVG P (39-67)	P	2.07	2.58	2.13	3.97	3.95	3.55	1.36	2.18	2.58	2.66	2.83	2.38	32.24		
	Q	.34	.39	.39	.92	.76	.54	.08	.09	.21	.19	.42	.34	4.67		
MEAN (39-67)	P															
79 YR		2.13	2.37	2.74	4.23	4.61	3.24	1.89	1.93	2.89	2.59	2.50	2.56	33.68		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	4-13	.46	4-13	.32	4-13	.38	11-10	.63	11-10	.89	11-9	1.13	11-9	1.15	11-9	1.15
MAXIMUMS FOR PERIOD OF RECORD																
1936 TO 1967	4-19	3.73	4-19	2.90	4-19	3.48	3-29	4.13	3-29	4.27	3-29	4.62	4-23	5.34	4-19	10.57
1957	1957		1957		1957		1965		1965		1965		1957		1957	
NOTES: Watershed land use: 93% row grain sorghum; 4% pasture; 3% gravel roads. Cropland terraced and contour tilled; no change in conservation practices. 1/ Precipitation data from Thiessen method using rain gages 69 and 69B. 2/ Precipitation and runoff records began July 1, 1938; station not in operation July 1943 to May 1, 1946; part-year amounts not included in averages. 3/ Mean P based on 79-yr (1869-1967) U. S. Weather Bureau record period at Waco, Texas. 4/ Maximums for 1943 occurred before July; maximums for 1946 occurred after May 1. no maximums 1938, 1944, and 1945.																
1967 SELECTED RUNOFF EVENT							RIESEL (WACO), TEXAS		WATERSHED Y-10		42.17					
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
Event of April 13, 1967																
3-20	2 RG5/ .47	.0000	4-13	RG	69		4-13	0403	.0000	.0000						
3-25	.18	.0000		0212	.00	.00		0405	.0289	.0003						
3-26	.28	.0000		0254	.07	.05		0408	.0388	.0021						
4-11	.58	.0000		0300	.70	.12		0414	.0317	.0056						
				0312	.20	.16		0424	.0185	.0098						
				0338	1.55	.83		0434	.0095	.0121						
				0352	.73	1.00		0440	.0089	.0131						
				0358	1.60	1.16		0450	.0236	.0152						
				0404	.30	1.19		0454	.1318	.0192						
				0430	.00	1.19		0457	.2585	.0293						
Watershed conditions: 93% row grain sorghum, 3 to 6 inches high; 4% pasture, bermudagrass, good cover, moderately grazed; 3% gravel roads. Cropland terraced, contour cultivation.				0500	1.08	1.73	0501	.2969	.0478							
				0534	.34	2.02	0504	.4235	.0658							
				0754	.04	2.12	0508	.4650	.0954							
				0804	.36	2.18	0514	.4305	.1405							
				RG	69B	2.02	0519	.3878	.1746							
				2 RG	AVG5/	2.07	0529	.3344	.2346							
							0539	.2701	.2860							
							0549	.1806	.3231							
							0559	.1177	.3474							
							0609	.0803	.3637							
							0619	.0544	.3748							
							0629	.0388	.3825							
							0644	.0257	.3904							
							0659	.0178	.3959							
							0729	.0103	.4028							
							0759	.0083	.4074							
							0920	.0045	.4170							
							1100	.0022	.4225							
							1400	.0006	.4264							
							1600	.0001	.4270							
							2400	.0000	.4272							
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 18.755. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1964, USDA MISC. PUB. 1194, P. 42.11-5 (REVISED). 5/ THIESSEN WEIGHTED RAINFALL USING RAIN GAGES 69 AND 69B.																



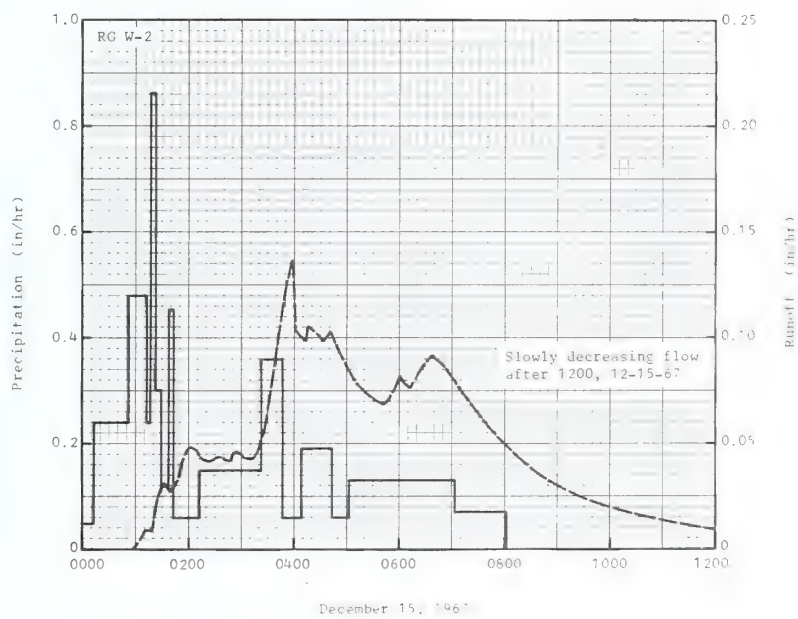
RIESEL (WACO), TEXAS WATERSHED Y-10

MONTHLY PRECIPITATION AND RUNOFF (inches)						RIESEL (WACO), TEXAS		WATERSHED SW-12		42.24						
						AREA — 2.97 ACRES										
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	P ¹ / ₂	.29	.40	1.19	4.30	3.31	.41	2.14	2.49	3.51	5.16	3.58	3.93	30.71		
	o	.00	.00	.00	.02	.00	.00	.00	.00	.00	.01	.07	.70	.80		
STA AVG P	2/	2.08	2.65	2.10	3.98	3.90	3.65	1.39	2.15	2.56	2.66	2.82	2.34	32.28		
(38-67) o		.34	.52	.34	.60	.55	.26	T	.02	.04	.01	.16	.28	3.12		
MEAN	3/															
79 YR	4/	2.13	2.37	2.74	4.23	4.61	3.24	1.89	1.93	2.89	2.59	2.50	2.56	33.68		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	12-15	.10	12-15	.09	12-15	.17	12-15	.39	12-15	.43	12-15	.45	12-15	.48	12-15	.67
MAXIMUMS FOR PERIOD OF RECORD																
1935 TO	3-29	4.00	3-29	3.07	3-29	3.83	3-29	4.62	3-29	4.80	3-29	5.34	3-29	5.39	4-19	8.53E
1967 1/2	1965		1965		1965		1965		1965		1965		1965		1957	
NOTES: Watershed land use: 100% native grass meadow mowed annually for hay. 1/ Precipitation data obtained from rain gage 70. 2/ Precipitation and runoff records began Jan. 1, 1938; station not in operation July 1943 to June 1, 1947; part-year amounts not included in averages. 3/ Mean P based on 79-yr (1869-1967) U. S. Weather Bureau record period at Waco, Texas. 4/ Maximums for 1943 occurred before July; no maximums for 1944 through 1947.																
1967 SELECTED RUNOFF EVENT						RIESEL (WACO), TEXAS		WATERSHED SW-12		42.24						
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
Event of December 15, 1967																
	RG 70			RG	70		12-15	0016	.0000	.0000						
11-27	.38	.0000	12-15	0000	.00	.00		0041	.0011	.0024						
11-28	.05	.0000		0025	.12	.05		0051	.0007	.0025						
11-29	.09	.0000		0045	.27	.14		0111	.0034	.0031						
12-02	.04	.0000		0055	.12	.16		0119	.0025	.0035						
12-05	.24	.0000		0115	.51	.33		0127	.0045	.0039						
12-10	.19	.0000		0123	.23	.36		0141	.0031	.0048						
12-13	.21	.0000		0131	.83	.47		0146	.0038	.0051						
12-14	5/.38	.0000		0140	.13	.49		0216	.0031	.0067						
				0150	.30	.54		0224	.0038	.0072						
				0215	.00	.54		0226	.0035	.0073						
				0335	.16	.75		0236	.0042	.0080						
				0355	.42	.89		0241	.0041	.0083						
				0415	.03	.90		0316	.0101	.0122						
				0435	.27	.99		0334	.0225	.0165						
				0725	.12	1.33		0343	.0459	.0214						
				0805	.03	1.35		0356	.0694	.0340						
								0406	.0760	.0463						
								0411	.0742	.0525						
								0416	.0804	.0590						
								0420	.0733	.0640						
								0430	.0936	.0781						
								0435	.0963	.0862						
								0441	.1014	.0960						
								0446	.1042	.1046						
								0456	.0941	.1212						
								0506	.0835	.1360						
								0546	.0737	.1887						
								0601	.0851	.2054						
								0611	.0815	.2224						
								0646	.0958	.2754						
								0701	.0835	.2978						
								0718	.0882	.3219						
								0746	.0609	.3574						
								0811	.0369	.3778						
								0901	.0220	.4017						
								1001	.0113	.4119						
								1201	.0043	.4319						
								2012	.0012	.4520						
								2400	5/.0011	.4563						
NOTES: 1/ TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 2.9947. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, MISC. PUB. 945, P. 42.24-4. 2/ RAINFALL ENDED AT 2335. 3/ NEXT EVENT BEGAN AT 1955 DEC. 16, 1967.																



RIESEL (WACO), TEXAS WATERSHED SW-12

MONTHLY PRECIPITATION AND RUNOFF (inches)							RIESEL (WACO), TEXAS				WATERSHED SW-17				42.28	
							AREA — 2.99 ACRES									
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	P ¹ / _Q	.25	.43	1.09	4.47	3.39	.06	2.44	2.22	3.22	5.04	3.49	3.58	29.68		
	Q	.00	.00	.00	.14	T	.00	.00	.00	.00	.04	.58	.70	1.46		
STA AVG P (40-67)	P	1.94	2.72	2.12	4.17	3.86	3.58	1.48	2.26	2.71	2.92	2.98	2.41	33.15		
MEAN	P ² / _Q	.33	.57	.47	.94	.79	.68	.11	.05	.20	.18	.50	.50	5.35		
79 YR		2.13	2.37	2.74	4.23	4.61	3.24	1.89	1.93	2.89	2.59	2.50	2.56	33.68		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	4-13	.22	12-15	.11	12-15	.19	12-15	.44	12-15	.56	12-15	.57	11-9	.58	12-15	.68
MAXIMUMS FOR PERIOD OF RECORD																
1939 TO 1967	10-31	7.06	4-19	2.54	4-19	2.96	4-23	3.31	3-29	3.52	3-29	4.25	11-22	5.37	4-19	9.42
	1940		1957		1957		1957		1965		1965		1940		1957	
NOTES																
Watershed land use: 100% bermudagrass pasture. 1/ Precipitation data obtained from rain gage W-2. 2/ Precipitation and runoff records began Feb. 1, 1939; station not in operation July 1943 to Jan. 1, 1948; part-year amounts not included in averages. 3/ Mean P based on 79-yr (1889-1967) U. S. Weather Bureau record period at Waco, Texas. 4/ Maximums for 1939 occurred after Feb.; maximums for 1943 occurred before July; no maximums 1944 through 1947.																
1967 SELECTED RUNOFF EVENT							RIESEL (WACO), TEXAS				WATERSHED SW-17				42.28	
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
Event of December 15-16, 1967																
	RG W-2			RG	W-2		12-15	0047	.0000	.0000						
11-27	.37	.0000	12-15	0000	.00	.00		0057	.0011	.0001						
11-28	.05	.0000		0011	.05	.01		0112	.0094	.0014						
11-29	.07	.0000		0051	.24	.17		0118	.0091	.0023						
12-05	.22	.0000		0111	.48	.33		0123	.0172	.0035						
12-10	.13	.0000		0116	.24	.35		0128	.0273	.0054						
12-13	.26	.0000		0123	.86	.45		0136	.0273	.0091						
12-14	5/.33	.0000		0127	.30	.47		0151	.0418	.0182						
				0137	.12	.49		0201	.0485	.0256						
				0141	.45	.52		0211	.0435	.0333						
				0211	.06	.55		0226	.0414	.0439						
				0321	.15	.72		0231	.0428	.0474						
				0346	.36	.87		0241	.0418	.0545						
				0406	.06	.89		0251	.0452	.0617						
				0441	.19	1.00		0301	.0425	.0690						
				0501	.06	1.02		0326	.0544	.0881						
				0631	.13	1.22		0341	.0968	.1061						
				0801	.07	1.32		0351	.1250	.1247						
								0356	.1371	.1355						
								0401	.1046	.1449						
								0411	.0984	.1617						
								0415	.1052	.1685						
								0431	.0990	.1956						
								0441	.1024	.2125						
								0501	.0834	.2436						
								0541	.0693	.2937						
								0601	.0819	.3189						
								0606	.0794	.3256						
								0616	.0794	.3388						
								0636	.0913	.3684						
								0701	.0784	.4043						
								0806	.0463	.4763						
								0901	.0279	.5091						
								1100	.0140	.5460						
								1430	.0025	.5676						
								12-16	2400	.0001	.5745					
									1030	.0000	.5755					
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 3.0149. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1963, USDA MISC. PUB. 1164, P. 42.6-6 (REVISED). 5/ RAINFALL ENDED AT 2331.																

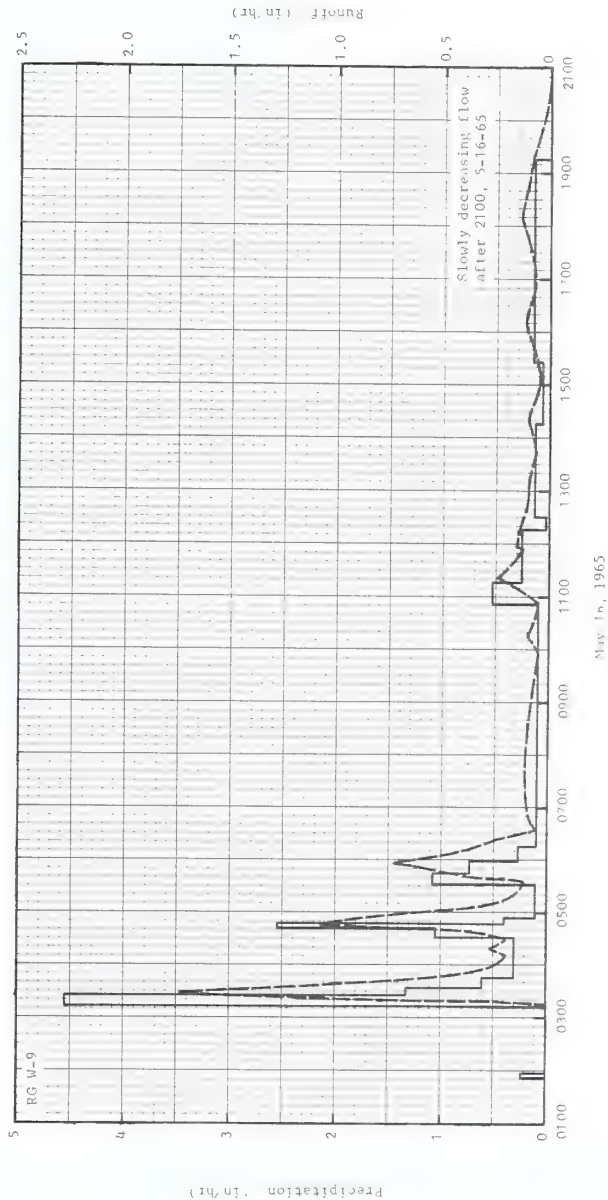


RIESEL (WACO), TEXAS WATERSHED SW-17

MONTHLY PRECIPITATION AND RUNOFF (inches)						RIESEL (WACO), TEXAS		WATERSHED P-1		42.31						
						AREA — 0.243 ACRE										
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	P ₁ / Q	.23 .00	.48 .00	1.17 .00	4.30 T	3.88 .00	.01 .00	1.71 .00	3.64 .00	3.46 .00	4.70 .00	3.49 .04	3.74 .13	30.81 .17		
STA AVG P (38-67)	P	2.37	2.86	2.15	3.77	3.53	4.22	1.21	2.63	2.88	2.66	3.39	2.82	34.49		
MEAN P ₁ / Q	Q	.38	.49	.46	.64	.59	.69	.03	.10	.12	.01	.36	.30	4.17		
79 YR	P ₁ / Q	2.13	2.37	2.74	4.23	4.61	3.24	1.89	1.93	2.89	2.59	2.50	2.56	33.68		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	12-15	.03	12-15	.02	12-15	4/.05	12-15	.10	12-15	.10	12-15	.10	12-15	.12	12-15	.13
MAXIMUMS FOR PERIOD OF RECORD																
1938 TO 1967	6-10 1941	7.18	3-29 1965	2.16	3-29 1965	2.93	3-29 1965	3.42	3-29 1965	3.64	3-29 1965	4.63	4-24 1966	5.62	4-24 1966	7.36
NOTES: Watershed land use: 100% bermudagrass and buffalograss pasture, heavily grazed. 1/ Precipitation data obtained from rain gage W-9. 2/ Precipitation and runoff records began Jan. 1, 1938; station not in operation July 1943 to Jan. 1, 1960; part-year amounts not included in averages. 3/ Mean P based on 79-yr (1889-1967) U. S. Weather Bureau record period at Waco, Texas. 4/ Runoff for 1 hr was 0.0233 in. and for 2 hr was 0.0458 in. Rounding caused 2-hr volume to be more than twice the 1-hr volume. 5/ Maximums for 1943 occurred before July; no maximums 1944 through 1959.																
1965 SELECTED RUNOFF EVENT						RIESEL (WACO), TEXAS		WATERSHED P-1		42.31						
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in./hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in./hr)	ACC. (inches)						
Event of May 16-17, 1965																
	RG W-9		5-16	RG	W-9		5-16	0316	.0000	.0000						
4-25	.08	.0000		0151	.00	.00		0319	.2263	.0036						
4-26	.58	.0000		0156	.24	.02		0321	.8750	.0210						
5-05	.02	.0000		0313	.00	.02		0326	1.3624	.1168						
5-09	1.27	.0000		0325	4.55	.93		0329	1.7317	.1961						
5-10	2.03	.1445		0335	1.32	1.15		0332	1.4871	.2778						
5-11	.00	.0005		0345	.60	1.25		0336	1.1192	.3655						
5-14	.75	.0000		0431	.30	1.48		0342	.7414	.4537						
				0443	1.05	1.69		0348	.4977	.5166						
				0447	2.55	1.86		0356	.2792	.5663						
				0455	.38	1.91		0412	.1986	.6314						
				0531	.10	1.97		0419	.2635	.6589						
				0545	1.07	2.22		0430	.1964	.7017						
				0559	.73	2.39		0438	.3710	.7372						
				0615	.26	2.46		0443	.7326	.7805						
				1051	.10	2.92		0445	.9485	.8086						
				1115	.53	3.13		0447	1.0714	.8424						
				1215	.25	3.38		0451	.9687	.9121						
				1231	.04	3.39		0455	.7816	.9709						
				1415	.15	3.65		0501	.4941	1.0351						
				1525	.07	3.73		0506	.3321	1.0686						
				1915	.16	4.35		0517	.1606	1.1114						
								0532	.1017	1.1440						
								0539	.3009	1.1652						
								0548	.5305	1.2275						
								0556	.7282	1.3133						
								0607	.4625	1.4246						
								0622	.2409	1.5142						
								0732	.0683	1.6290						
								0752	.0804	1.6755						
								0952	.0447	1.7775						
								1012	.0921	1.8003						
								1052	.0517	1.8456						
								1120	.2409	1.9199						
								1152	.1267	2.0121						
								1157	.1528	2.0236						
								1207	.1489	2.0476						
								1227	.1251	2.0978						
								1302	.1003	2.1645						
								1342	.0603	2.2154						
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 0.245. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USDA MISC. PUB. 994, P. 42.31-4.																

1965 SELECTED RUNOFF EVENT			RIESEL (WACO), TEXAS				WATERSHED P-1			42.31
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)
			Event of May 16-17, 1965 - Continued							
							5-16	1417	.0934	2.2593
								1512	.0457	2.3145
								1612	.1102	2.3901
								1702	.0730	2.4599
								1802	.1303	2.5602
								2032	.0138	2.7290
								2400	.0000	2.7452
							5-17	0447	.0000	2.7474

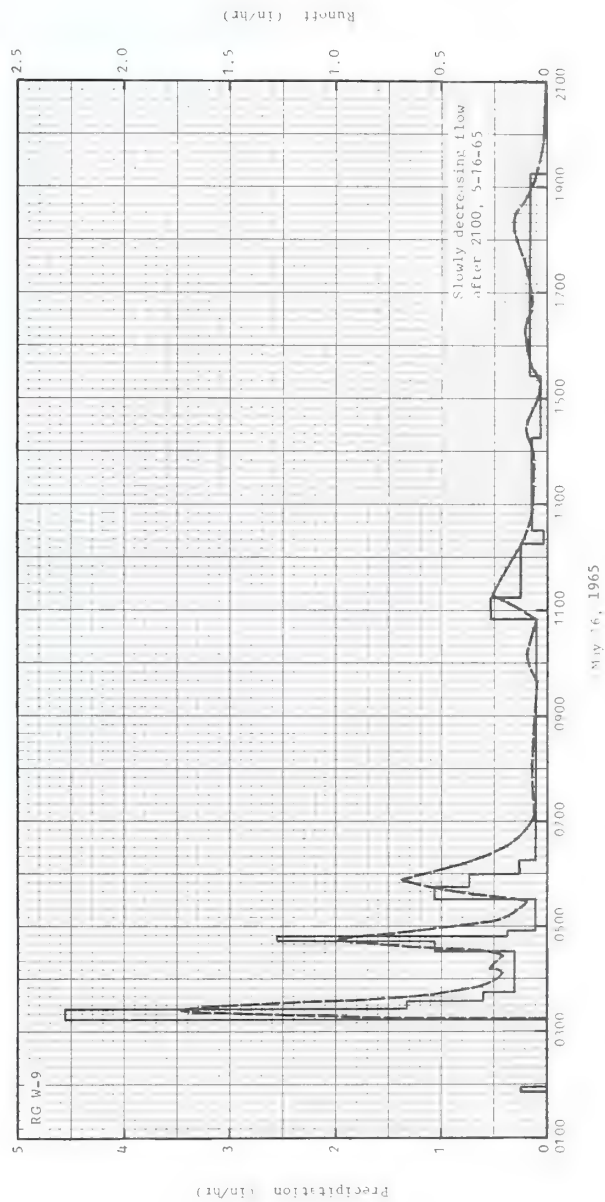
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 0.245.



RIESEL (WACO), TEXAS WATERSHED P-1

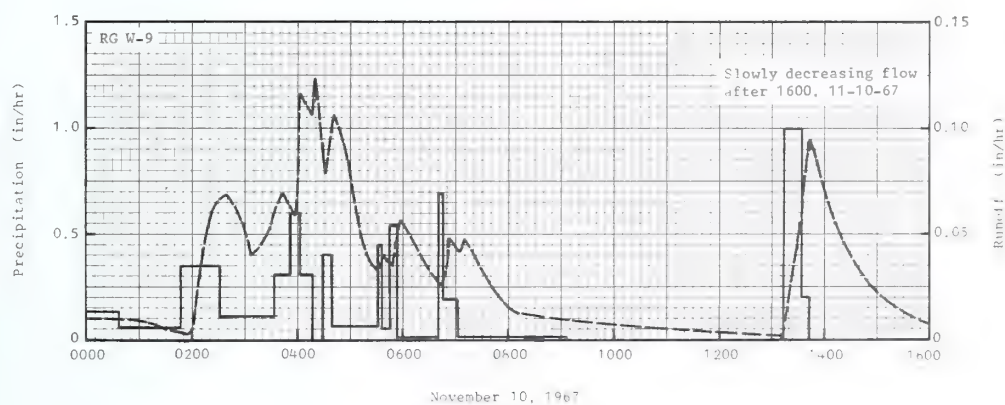
MONTHLY PRECIPITATION AND RUNOFF (inches)						RIESEL (WACO), TEXAS		WATERSHED P-2		42.32						
						AREA -- 0.243 ACRE										
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	P ¹ / ₀	.23	.48	1.17	4.30	3.88	.01	1.71	3.64	3.46	4.70	3.49	3.74	30.81		
	Q	.00	.00	.00	.02	.00	.00	.00	.00	.00	.00	.02	.01	.05		
STA AVG P (35-67)	P ² / ₀	2.24	2.84	2.23	3.97	3.42	4.39	1.28	2.62	3.09	2.71	3.47	2.96	35.22		
	Q	.45	.63	.68	.71	.64	.95	.07	.16	.20	.04	.57	.47	5.57		
MEAN 79 YR	P ³ / ₀	2.13	2.37	2.74	4.23	4.61	3.24	1.89	1.93	2.89	2.59	2.50	2.56	33.68		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	4-13	T	4-13	T	4-13	.01	4-13	.02	4-13	.02	4-13	.02	4-13	.02	4-13	.02
MAXIMUMS FOR PERIOD OF RECORD																
1938 TO 1967	6-10	6.65	3-29	2.24	3-29	3.11	3-29	3.94	3-29	4.50	3-29	6.22	3-29	6.22	3-29	6.24
	1941		1965		1965		1965		1965		1965		1965		1965	
NOTES																
Watershed land use: 100% bermudagrass and buffalograss pasture, heavily grazed. 1/ Precipitation data obtained from rain gage W-9. 2/ Precipitation and runoff records began Jan. 1, 1938; runoff record lost May 16-20, 1939, which was only runoff that year; station not in operation July 1943 to Jan. 1, 1960; part-year amounts not included in averages. 3/ Mean P based on 79-yr (1889-1967) U. S. Weather Bureau record period at Waco, Texas. 4/ Maximums for 1943 occurred before July; no maximums for 1939 and 1944 through 1959.																
1965 SELECTED RUNOFF EVENT						RIESEL (WACO), TEXAS		WATERSHED P-2		42.32						
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
Event of May 16-17, 1965																
	RG W-9			RG	W-9		5-16									
4-25	.08	.0000	5-16	0151	.00	.00		0312	.0000	.0000						
4-26	.58	.0000		0156	.24	.02		0315	.2982	.0039						
5-05	.02	.0000		0313	.00	.02		0318	.9586	.0380						
5-09	1.27	.0000		0325	4.55	.93		0321	1.4309	.0982						
				0325				0325	1.7395	.2063						
5-10	2.03	.2828		0335	1.32	1.15		0328	1.5736	.2889						
5-11	.00	.0218		0345	.60	1.25		0331	1.2374	.3592						
5-12	.00	.0003		0431	.30	1.48		0335	.8559	.4283						
5-14	.75	.0000		0443	1.05	1.69		0345	.4834	.5411						
Watershed conditions: 100% pasture, bermudagrass and buffalograss, 2 to 6 inches high, dense cover, grazed.				0447	2.55	1.86		0352	.3037	.5860						
				0455	.38	1.91		0407	.2146	.6534						
				0531	.10	1.97		0412	.2740	.6730						
				0545	1.07	2.22		0426	.2192	.7317						
				0559	.73	2.39		0437	.5158	.7920						
				0615	.26	2.46		0441	.8750	.8369						
				1051	.10	2.92		0445	.9849	.9007						
				1115	.53	3.13		0455	.5721	1.0325						
				1215	.25	3.38		0505	.2610	1.0985						
				1231	.04	3.39		0527	.1031	1.1550						
	1415	.15	3.65		0537	.3350	1.1867									
				1525	.07	3.73		0551	.6810	1.3056						
				1915	.16	4.35		0610	.3803	1.4750						
								0712	.0581	1.6125						
								0812	.0767	1.6793						
								0937	.0438	1.7534						
								1007	.0908	1.7816						
								1047	.0538	1.8297						
								1117	.2584	1.9117						
								1343	.0614	2.2066						
								1427	.0934	2.2665						
								1515	.0364	2.3151						
								1612	.1073	2.3879						
								1652	.0779	2.4477						
								1812	.1586	2.5946						
								1902	.0718	2.6867						
								2002	.0133	2.7268						
								2400	.0001	2.7382						
								5-17 0127	.0000	2.7383						
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 0.245. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USDA MISC. PUB. 994, P. 42.31-4.																

Cooperative Research Project of USDA and Texas Agricultural Experiment Station



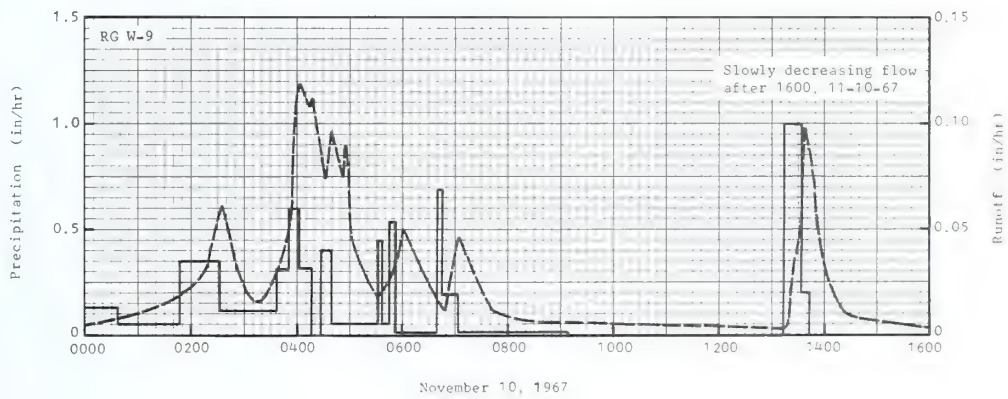
RIESSEL (WACO), TEXAS WATERSHED P-2

MONTHLY PRECIPITATION AND RUNOFF (inches)						RIESEL (WACO), TEXAS								WATERSHED P-3		42.33	
						AREA — 0.243 ACRE											
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL				
1967	.23	.48	1.17	4.30	3.88	.01	1.71	3.64	3.46	4.70	3.49	3.74	30.81				
2/	.00	.00	.00	.06	.00	.00	.00	.00	.00	.03	.46	.37	.92				
STA AVG P	2.37	2.86	2.15	3.77	3.53	4.22	1.21	2.63	2.88	2.66	3.39	2.82	34.49				
(38-67)	.46	.67	.50	.75	.85	.88	.06	.12	.22	.08	.53	.42	5.54				
MEAN																	
79 YR	2.13	2.37	2.74	4.23	4.61	3.24	1.89	1.93	2.89	2.59	2.50	2.56	33.68				
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																	
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL														
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS		
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	
1967	11-10	.12	11-10	.10	11-10	.15	11-10	.31	11-10	.34	11-9	.46	11-9	.46	11-9	.46	
MAXIMUMS FOR PERIOD OF RECORD																	
1938 TO	6-10	7.63	6-10	2.13	3-29	2.69	3-29	3.20	3-29	3.43	3-29	4.27	4-24	5.86	4-23	6.96	
1967	1941		1941		1965		1965		1965		1965		1966		1966		
NOTES: Watershed land use: 100% bermudagrass and buffalograss pasture, lightly grazed. 1/ Precipitation data obtained from rain gage W-9. 2/ Precipitation and runoff records began Jan. 1, 1938; station not in operation July 1943 to Jan. 1, 1960; part-year amounts not included in averages. 3/ Mean P based on 79-yr (1889-1967) U. S. Weather Bureau record period at Waco, Texas. 4/ Maximums for 1943 occurred before July; no maximums 1944 through 1959.																	
1967 SELECTED RUNOFF EVENT						RIESEL (WACO), TEXAS				WATERSHED P-3				42.33			
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF										
DATE	RAINFALL	RUNOFF	DATE	TIME	INTENSITY	ACC.	DATE	TIME	RATE	ACC.							
MO-DAY	(inches)	(inches)	MO-DAY	OF DAY	(in/hr)	(inches)	MO-DAY	OF DAY	(in/hr)	(inches)							
Event of November 10, 1967																	
	RG W-9			RG	W-9		11-10	0000	.0101	.0000							
10-14	.41	.0000	11-10	0000	.00	.00		0153	.0030	.0114							
10-15	1.50	.0000		0037	.13	.08		0238	.0683	.0339							
10-29	1.42	.0100		0147	.06	.15		0308	.0409	.0602							
10-30	.63	.0158		0233	.35	.42		0343	.0683	.0882							
10-31	.06	.0000		0337	.12	.55		0355	.0603	.1006							
11-08	.12	.0000		0352	.32	.63		0403	.1161	.1122							
11-09	5/1.25	.0140		0402	.60	.73		0416	.1073	.1366							
				0417	.32	.81		0420	.1236	.1443							
				0427	.00	.81		0433	.0779	.1658							
				0439	.40	.89		0441	.1073	.1777							
				0531	.07	.95		0533	.0347	.2300							
				0535	.45	.98		0538	.0382	.2331							
				0545	.06	.99		0549	.0347	.2398							
				0553	.53	1.06		0557	.0570	.2462							
				0637	.01	1.07		0643	.0258	.2774							
				0645	.68	1.16		0653	.0487	.2839							
				0701	.19	1.21		0701	.0419	.2899							
				0907	.01	1.23		0709	.0477	.2961							
				1313	.00	1.23		0803	.0138	.3213							
				1334	1.00	1.58		1311	.0009	.3441							
				1343	.20	1.61		1332	.0559	.3480							
								1341	.0934	.3602							
								1401	.0625	.3865							
								1501	.0214	.4236							
								1801	.0008	.4457							
								2030	.0000	.4467							
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 0.245. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USDA MISC. PUB. 994, P. 42.31-4. 5 RAINFALL ENDED AT 2327.																	



RIESEL (WACO), TEXAS WATERSHED P-3

MONTHLY PRECIPITATION AND RUNOFF (inches)							RIESEL (WACO), TEXAS				WATERSHED P-4				42.34	
							AREA — 0.243 ACRE									
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	P ¹ / ₀	.23	.48	1.17	4.30	3.88	.01	1.71	3.64	3.46	4.70	3.49	3.74	30.81		
	o	.00	.00	.00	.04	.00	.00	.00	.00	.00	.06	.36	.31	.77		
	STA AVG P	2.37	2.86	2.15	3.77	3.53	4.22	1.21	2.63	2.88	2.66	3.39	2.82	34.49		
	(38-67) o	.52	.66	.45	.72	.63	.87	.06	.09	.18	.04	.60	.59	5.41		
	MEAN P ² / ₃															
	79 YR	2.13	2.37	2.74	4.23	4.61	3.24	1.89	1.93	2.89	2.59	2.50	2.56	33.68		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	11-10	.12	11-10	.10	11-10	.13	11-10	.24	11-10	.27	11-9	.35	11-9	.36	11-9	.36
MAXIMUMS FOR PERIOD OF RECORD																
1938 TO 1967 ³ / ₁₉₄₁	6-10	7.79	11-22	2.15	3-29	2.43	3-29	2.86	3-29	3.01	3-29	3.70	4-24	6.28	4-23	6.96
			1940		1965		1965		1965		1965		1966		1966	
NOTES: Watershed land use: 100% bermudagrass and buffalograss pasture, lightly grazed. 1/ Precipitation data obtained from rain gage W-9. 2/ Precipitation and runoff records began Jan. 1, 1938, station not in operation July 1943 to Jan. 1, 1960; part-year amounts not included in averages. 3/ Mean P based on 79-yr (1889-1967) U. S. Weather Bureau record period at Waco, Texas. 4/ Maximums for 1943 occurred before July; no maximums 1944 through 1959.																
1967 SELECTED RUNOFF EVENT							RIESEL (WACO), TEXAS				WATERSHED P-4				42.34	
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
Event of November 10-11, 1967																
	RG W-9		11-10	RG	W-9		11-10	0000	.0053	.0000						
10-14	.41	.0000		0000	.00	.00		0220	.0330	.0160						
10-15	1.50	.0000		0037	.13	.08		0235	.0614	.0269						
10-29	1.42	.0119		0147	.06	.15		0250	.0364	.0397						
10-30	.63	.0482		0233	.35	.42		0315	.0156	.0488						
10-31	.06	.0000		0337	.12	.55		0355	.0603	.0687						
11-08	.12	.0000		0352	.32	.63		0405	.1176	.0846						
11-09	5/1.25	.0152		0402	.60	.73		0414	.1073	.1018						
Watershed conditions: 100% pasture, bermudagrass and buffalograss, 6 to 36 inches high, dense cover, lightly grazed.				0417	.32	.81		0417	.1117	.1072						
				0427	.00	.81		0432	.0742	.1317						
				0439	.40	.89		0440	.0961	.1425						
				0531	.07	.95		0451	.0754	.1591						
				0535	.45	.98		0453	.0881	.1618						
				0545	.06	.99		0500	.0507	.1692						
				0553	.53	1.06		0530	.0194	.1849						
				0637	.01	1.07		0550	.0289	.1921						
				0645	.68	1.16		0600	.0487	.1989						
				0701	.19	1.21		0644	.0122	.2178						
				0907	.01	1.23		0703	.0457	.2286						
				1313	.00	1.23		0740	.0122	.2463						
				1334	1.00	1.58		1314	.0030	.2720						
				1343	.20	1.61		1331	.0517	.2755						
								1338	.0975	.2852						
								1349	.0581	.2995						
								1419	.0127	.3149						



RIESEL (WACO), TEXAS

WATERSHED P-4

MONTHLY PRECIPITATION AND RUNOFF (inches)						HASTINGS, NEBRASKA						WATERSHED W-3						44.1			
						AREA-481 ACRES															
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL							
1967	P1/ Q	2/.12 .00	2/.15 .00	2/.13 .00	1.72 .00	4.66 .08	6.05 .80	2.70 .17	.46 .00	4.56 .27	1.26 .08	2/.10 .00	2/.50 .00	22.41 1.40							
STA AVG P (39-67) Q		.30 .01	.52 .06	1.09 .17	1.93 .09	3.60 .65	4.92 1.13	2.89 .48	2.61 .22	2.67 .38	1.10 .10	.57 .03	.38 T	22.58 3.32							
MEAN P 3/ 72 YR		.47	.78	1.19	2.27	3.32	4.28	3.18	2.71	2.67	1.39	.87	.62	23.75							
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																					
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL																		
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS						
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME					
1967	9-19	.13	9-20	.10	9-19	.16	6-11	.27	6-11	.28	6-10	.39	6-9	.42	6-5	.48					
MAXIMUMS FOR PERIOD OF RECORD																					
1940 TO 1967	7-3 1959	2.00	7-3 1959	1.32	5-21 1965	1.74	5-21 1965	2.49	5-21 1965	4.43	5-21 1965	4.82	5-21 1965	4.82	5-21 1965	5.55					
Notes: Watershed conditions: Crops including wheat, corn, sorghum, alfalfa and meadow were in good condition. Fallow fields had no cover. Pastures good to excellent. 1/ Arithmetic average of rain gages A-12-R, B-10-R, B-31-R, and B-36-R. 2/ Based on meteorological station records. 3/ Mean P based on 72-yr (1893-1964) U.S. Weather Bureau record period at Red Cloud, Nebr.																					

1967 DAILY AIR TEMPERATURE (degrees F)						HASTINGS, NEBRASKA						WATERSHED W-3						44.1								
DAY	JAN		FEB		MAR		APR		MAY		JUNE		JULY		AUG		SEPT		OCT		NOV		DEC			
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN		
1	33	1	47	31	66	30	65	33	65	32	53	46	88	59	92	67	70	51	80	45	55	31	37	30		
2	33	20	35	13	79	28	61	32	48	24	52	47	85	53	88	64	59	51	81	53	59	30	41	25		
3	30	10	34	14	65	24	60	32	57	28	65	49	78	53	89	61	70	53	84	52	39	25	42	16		
4	31	15	55	21	47	26	61	42	34	28	76	58	76	50	86	57	61	54	86	57	34	20	54	24		
5	36	19	55	39	36	25	79	53	49	33	81	60	69	55	84	62	74	48	77	52	31	14	51	25		
6	33	21	40	7	40	12	87	49	45	37	75	59	74	53	85	66	77	52	61	48	40	21	54	23		
7	25	11	25	10	48	4	68	29	52	38	84	62	76	57	90	65	79	51	59	46	43	20	52	26		
8	15	-10	26	11	16	-4	59	40	73	42	80	53	83	66	81	66	81	54	57	39	57	23	44	25		
9	24	-8	47	19	48	13	82	50	72	44	78	58	81	67	86	56	86	50	58	39	63	28	41	30		
10	36	15	52	28	64	30	66	32	80	58	78	56	90	67	76	53	80	51	67	32	62	41	32	25		
11	27	11	48	19	77	27	59	35	89	41	78	58	90	69	76	50	80	53	53	34	54	31	33	17		
12	40	21	47	14	53	22	63	44	55	39	73	53	86	65	78	49	80	60	67	43	69	39	43	25		
13	38	22	55	20	59	26	65	50	48	37	80	57	89	56	80	51	85	51	78	45	56	31	32	18		
14	43	26	70	31	40	27	66	39	54	41	83	65	78	50	84	57	72	47	69	43	51	29	30	16		
15	36	9	73	2	41	16	73	44	59	37	89	64	78	55	89	55	70	48	75	45	63	23	25	16		
16	41	16	18	4	39	19	78	44	68	44	84	60	68	55	89	56	77	53	62	32	51	30	30	20		
17	42	0	27	11	57	16	82	37	67	43	71	55	72	55	89	62	72	55	63	37	66	33	35	29		
18	11	0	47	0	25	17	63	32	81	49	77	58	75	57	88	62	78	56	70	32	64	25	43	23		
19	11	-3	30	5	40	22	66	43	91	44	81	62	75	62	77	53	78	57	59	33	50	27	41	22		
20	37	3	28	13	46	29	63	55	73	45	80	62	76	63	78	52	74	59	67	32	57	25	46	30		
21	43	25	27	8	54	26	71	41	66	44	78	60	85	64	87	55	79	51	62	38	48	29	56	9		
22	52	29	61	12	53	31	62	28	77	46	74	55	89	67	89	55	74	49	70	36	50	20	50	5		
23	52	3	30	9	72	35	54	29	84	58	80	55	95	68	88	60	77	52	76	43	42	24	31	8		
24	35	26	22	6	86	53	40	27	93	63	64	49	95	70	89	62	69	44	73	41	54	25	57	26		
25	29	21	35	10	83	45	54	37	98	68	65	48	91	64	88	61	71	46	55	27	54	27	55	15		
26	25	13	47	28	47	35	43	35	97	63	72	53	89	65	91	56	87	53	55	28	47	25	31	15		
27	22	6	55	29	59	34	45	28	85	51	74	59	93	61	74	52	63	35	51	30	38	15	38	7		
28	29	14	53	23	67	37	61	46	60	51	85	59	83	63	80	52	57	32	52	30	40	13	20	2		
29	52	25	-----	-----	71	52	73	57	68	53	82	62	84	65	93	61	61	39	64	40	36	24	22	10		
30	47	25	-----	-----	82	68	88	64	58	52	80	60	94	63	91	54	70	42	43	31	35	31	30	13		
31	47	28	-----	-----	82	34	-----	-----	57	47	-----	-----	93	66	72	46	-----	-----	52	24	-----	-----	24	-11		
AV.	34	13	42	16	56	28	65	40	68	45	76	57	83	61	85	57	74	50	65	39	50	26	38	18		
MEAN	23.7		29.0		42.0		52.7		56.2		66.2		72.0		71.0		61.8		52.1		38.1		28.3			
STA AV																										
NOTES																										
TEMPERATURE DATA FROM METEOROLOGICAL STATION FOR 24 HOURS ENDING 0800.																										

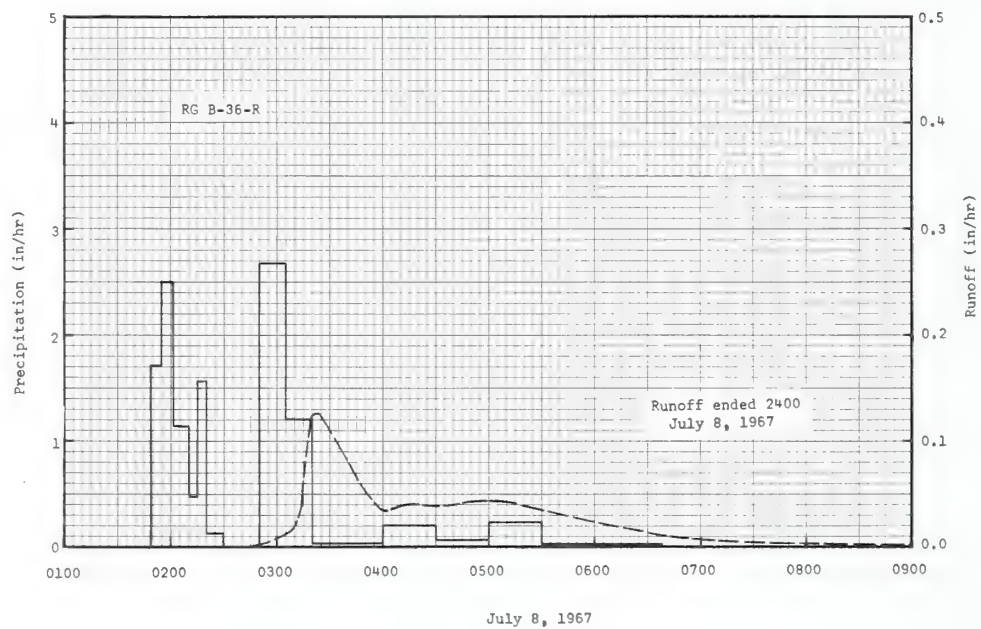
1967 DAILY PRECIPITATION (inches)						HASTINGS, NEBRASKA						WATERSHED W-3		44.1
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC		
1	.00	.12	.00	.31	.00	.04	.00	.12	.00	.00	.00	.00	T	
2	T	.00	.00	.00	T	.00	.00	.00	T	.00	.10	.10		
3	.00	.00	.00	.00	.12	.00	.00	.00	.12	.00	.00	.00		
4	.00	.00	.00	.00	.00	.00	.06	.00	.00	.00	.00	.00		
5	.00	.00	.00	.00	.44	.59	.08	.00	T	.76	.00	.00		
6	.09	.00	.00	.00	.43	.12	.00	.00	.00	.35	.00	.00		
7	.03	.00	.00	.00	.00	.72	.00	.06	.00	.00	.00	.00		
8	.00	.03	.00	.24	.00	.00	2.05	.00	.00	.00	.00	.05		
9	.00	.00	.00	.00	.00	.53	.00	.00	.00	.00	.00	.05		
10	.00	.00	.00	.00	.00	1.04	.12	.00	.00	.00	.00	T		
11	.00	.00	.00	.25	.00	1.02	.00	.00	.16	.00	.00	.00		
12	.00	.00	.00	.02	.00	.00	.00	.00	.33	.00	.00	.00		
13	.00	.00	.00	.39	.00	.00	T	.00	.54	.00	.00	.00		
14	.00	.00	.00	.05	.19	.00	.00	.06	.00	.00	.00	.00		
15	.00	T	.00	.00	T	.22	.00	.00	.00	.12	.00	.00		
16	.00	.00	.00	.00	.00	.00	.00	.00	.05	.00	.00	.26		
17	.00	.00	.00	.00	.00	.00	.02	.07	.55	.00	.00	.00		
18	T	T	.00	.00	.00	.00	.00	.00	.12	.00	.00	.00		
19	T	.00	T	.47	.00	.00	.00	.00	1.72	.00	.00	.00		
20	.00	.00	.00	.00	.15	.42	.00	.00	.27	.00	.00	.00		
21	.00	.00	.13	.00	.00	1.16	.00	.00	.00	.00	.00	.00		
22	.00	.00	.00	.00	.00	.02	.00	.00	.00	.00	.00	.00		
23	.00	.00	.00	T	.00	.21	.00	.00	.00	.00	.00	.00		
24	T	.00	.00	.00	.00	.53	.00	.00	.00	T	.00	.00		
25	.00	.00	.00	.12	.00	.00	.00	.00	.00	.00	.00	T		
26	T	.00	T	.03	.81	.00	.31	.13	.91	.00	.00	.00		
27	.00	.00	.00	.00	.21	.00	.49	.00	.00	.00	.00	.04		
28	.00	.00	.00	.00	.00	.17	.14	.00	.00	.00	.00	.00		
29	.00	.00	.00	.00	.10	.00	.00	.00	.00	.21	T	.00		
30	.00	.00	.00	.00	1.33	.00	.00	.00	.00	.00	.00	.00		
31	.00	.00	.00	.00	1.76	.00	.00	.00	.00	.00	.00	T		
TOTAL	.12	.15	.13	1.88	5.54	6.79	3.27	.44	4.77	1.44	.10	.50		
STAAV	.35	.58	1.19	1.89	3.98	5.08	3.36	2.75	2.76	1.15	.57	.38		

NOTES

STATION AVERAGE IS BASED ON METEOROLOGICAL STATION RECORDS FROM 1943 TO 1967.

1967 SELECTED RUNOFF EVENT			HASTINGS, NEBRASKA				WATERSHED W-3				44.1
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)	
Event of July 8, 1967											
6- 9	4 RG1/.43	.0178	7-8	RG	B-36-R	.00	7-8	0143	.0000	.0000	
6-10	1.11	.0433		0148		.00		0242	.0007	.0002	
6-11	.90	.3731		0155	1.71	.20		0308	.0177	.0036	
6-15	.18	.0093		0201	2.50	.45		0314	.0501	.0070	
6-20	.35	.0000		0210	1.13	.62		0321	.1240	.0179	
				0215	.48	.66					
6-21	1.11	.2050		0220	1.56	.79		0324	.1250	.0241	
6-23	.15	.0086		0230	.12	.81		0330	.1110	.0359	
6-24	.55	.1007		0250	.00	.81		0340	.0817	.0519	
6-28	.16	.0000		0305	2.68	1.48		0400	.0361	.0707	
7- 4	.04	.0000		0320	1.20	1.78		0420	.0420	.0832	
7- 5	.06	.0000		0400	.03	1.80		0435	.0394	.0931	
				0430	.20	1.90		0500	.0435	.1108	
				0500	.06	1.93		0515	.0410	.1213	
				0530	.24	2.05		0540	.0313	.1364	
				0640	.02	2.07		0630	.0145	.1555	
Watershed conditions:											
The land use in percentage of the watershed area was as follows:											
Percent			RG			A-12-R					
Sorghum.	22		0154	.00	.00	0730	.0045	.1650			
Wheat.	23		0212	.47	.14	0830	.0021	.1683			
Fallow.	11		0220	1.35	.32	1000	.0009	.1705			
Alfalfa.	5		0250	.02	.33	1200	.0003	.1717			
Pasture.	20		0310	1.14	.71	1600	.0001	.1725			
Meadow.	13										
Sudan.	2		0320	.42	.78		2400	.0000	.1729		
Farm Yard.	2		0400	.03	.80						
Roads.	2		0420	.33	.91						
Total	100		0520	.15	1.06						
			0640	.02	1.08						
			RG	B-10-R	1.08						
			RG	B-31-R	1.99						

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 485. FOR MAP OF W-3, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USDA MISC. PUB. 994, P. 44.1-4. 1/ ARITHMETIC AVERAGE OF RAIN GAGES A-12-R, B-10-R, B-31-R, AND B-36-R.



HASTINGS, NEBRASKA WATERSHED W-3

MONTHLY PRECIPITATION AND RUNOFF (inches)							HASTINGS, NEBRASKA					WATERSHED W-8 44.3			
							AREA-2,086 ACRES (3.26 SQ. MILES)								
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967 P 1/ Q	2/.13 .00	2/.14 .00	2/.26 .00	1.68 .00	4.89 .08	6.26 1.04	2.89 .36	.41 .00	4.51 .15	1.34 .06	2/.12 .00	2/.44 .00	23.07 1.69		
STA AVG P (39-67) Q	.31 .02	.53 .03	1.15 .13	1.91 .07	3.53 .49	4.98 1.07	2.92 .39	2.64 .22	2.68 .27	1.10 .07	.59 .01	.38 .00	22.72 2.77		
MEAN P 3/ 72 YR	.47	.78	1.19	2.27	3.32	4.28	3.18	2.71	2.67	1.39	.87	.62	23.75		

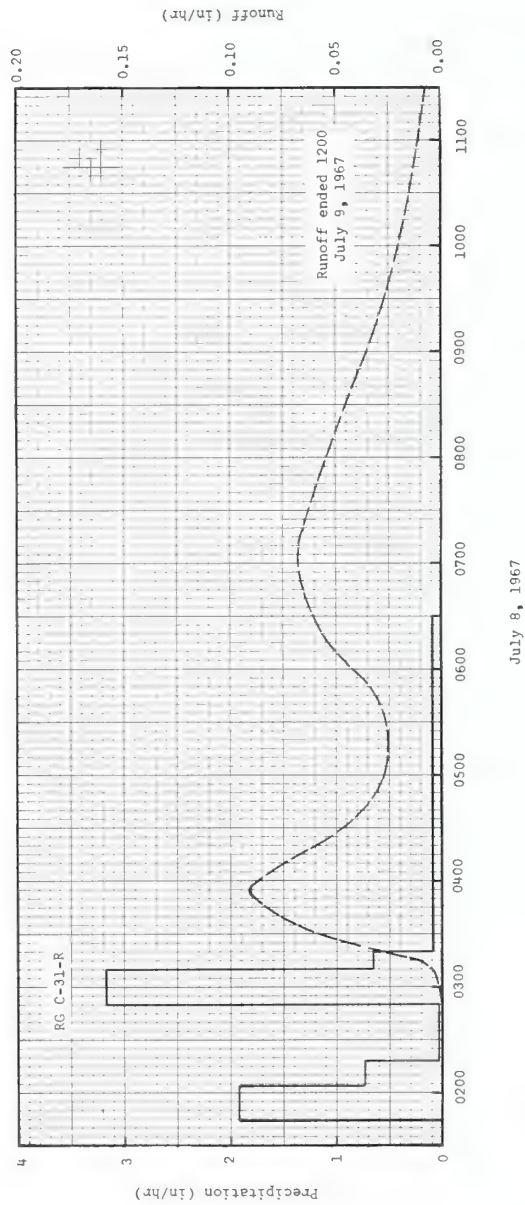
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		5 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	7-8	.09	7-8	.07	6-11	.13	6-11	.32	6-11	.37	6-10	.53	6-9	.59	6-5	.77

MAXIMUMS FOR PERIOD OF RECORD																
1939 TO 1967	5-22 1965	.52	5-22 1965	.43	5-22 1965	.78	6-15 1957	1.67	6-15 1957	2.58	6-15 1957	3.43	6-15 1957	4.86	6-13 1957	4.99

Notes: Watershed conditions: Crops including wheat, corn, sorghum, alfalfa and meadow were in good condition. Fallow fields had no cover. Pastures good to excellent. 1/ Arithmetic average of rain gages A-12-R, B-31-R, C-31-R and D-31-R. 2/ Arithmetic average of rain gage D-31-R and meteorological station. 3/ Mean P based on 72-yr (1893-1964) U.S. Weather Bureau record period at Red Cloud, Nebr.

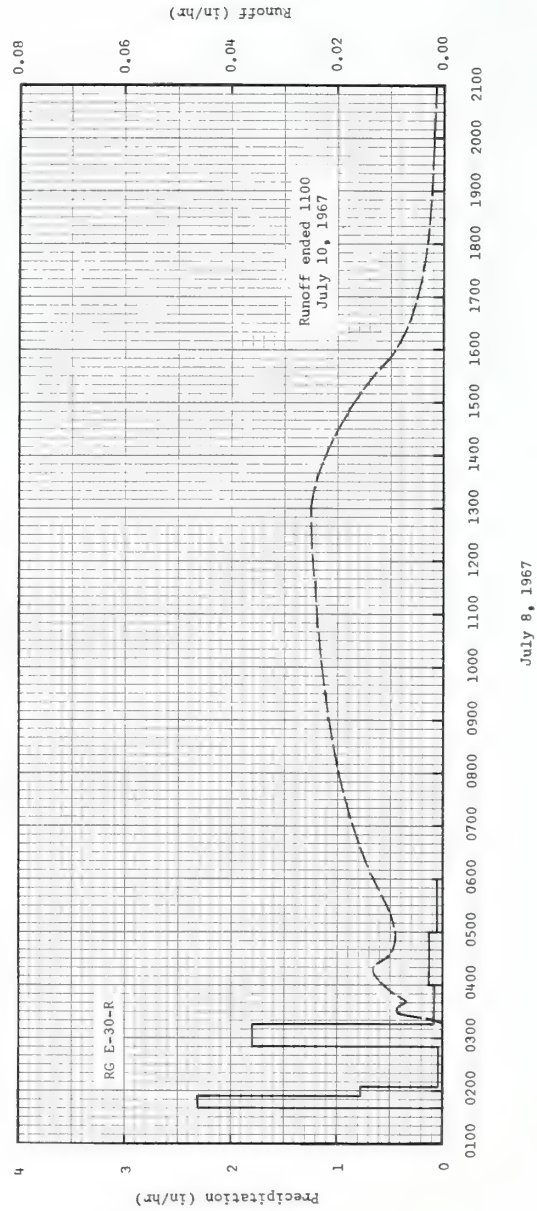
1967 SELECTED RUNOFF EVENT					HASTINGS, NEBRASKA				WATERSHED W-8 44.3				
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF						
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)			
Event of July 8, 1967													
4 RG 4/			RG				C-31-R						
6-9	.46	.0204	7-8	0144	.00	.00	7-8	0155	.0003	.0000			
6-10	1.04	.0542		0204	1.92	.64		0250	.0009	.0005			
6-11	.82	.5330		0218	.73	.81		0310	.0041	.0013			
6-12	.01	.0564		0250	.02	.82		0330	.0571	.0115			
6-13	.00	.0012		0310	3.18	1.88		0355	.0907	.0440			
6-15	.15	.0000		0320	.66	1.99		0410	.0746	.0646			
6-20	.46	.0000		0630	.09	2.27		0450	.0300	.0995			
6-21	1.07	.1607						0510	.0256	.1087			
6-22	T	.0015		RG	A-12-R			0540	.0287	.1223			
6-23	.23	.0076		0154	.00	.00		0620	.0565	.1498			
				0212	.47	.14							
6-24	.49	.0875		0220	1.35	.32		0650	.0679	.1809			
6-25	.00	.0024		0250	.02	.33		0710	.0679	.2035			
6-28	.13	.0000		0310	1.14	.71		0750	.0571	.2452			
7-4	.07	.0000						0850	.0382	.2928			
7-5	.07	.0000		0320	.42	.78		1010	.0180	.3303			
Watershed conditions:				0400	.03	.80		1140	.0068	.3489			
The land use in percentage of the watershed area was as follows:				0420	.33	.91		1310	.0025	.3559			
Percent				0420	.33	.91		1440	.0015	.3589			
Corn	T			0520	.15	1.06		1610	.0009	.3607			
Sorghum	28			0640	.02	1.08		1910	.0004	.3626			
Wheat	21			RG	D-31-R								
Fallow	14			0140	.00	.00		2400	.0001	.3638			
Alfalfa	8			0146	.60	.06							
Pasture	21			0156	4.92	.88							
Meadow	5			0216	.69	1.11		7-9	1200	.0000	.3644		
Farm Yard	1			0248	.00	1.11							
Roads	2			0318	1.40	1.81							
Total	100			0630	.08	2.08							
				RG	B-31-R	1.99							
				4 RG	AVG4/	1.86							

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 2103. FOR MAP OF W-8, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USDA MISC. PUB. 994, P. 44.1-4. 4/ ARITHMETIC AVERAGE OF RAIN GAGES C-31-R, A-12-R, D-31-R AND B-31-R.



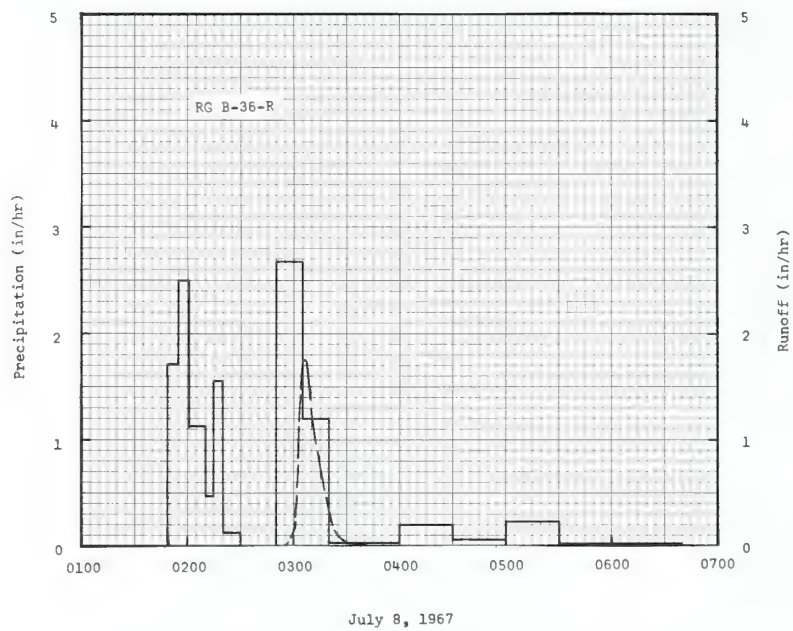
HASTINGS, NEBRASKA WATERSHED W-8

Cooperative Research Project of USDA and Nebraska Agricultural Experiment Station



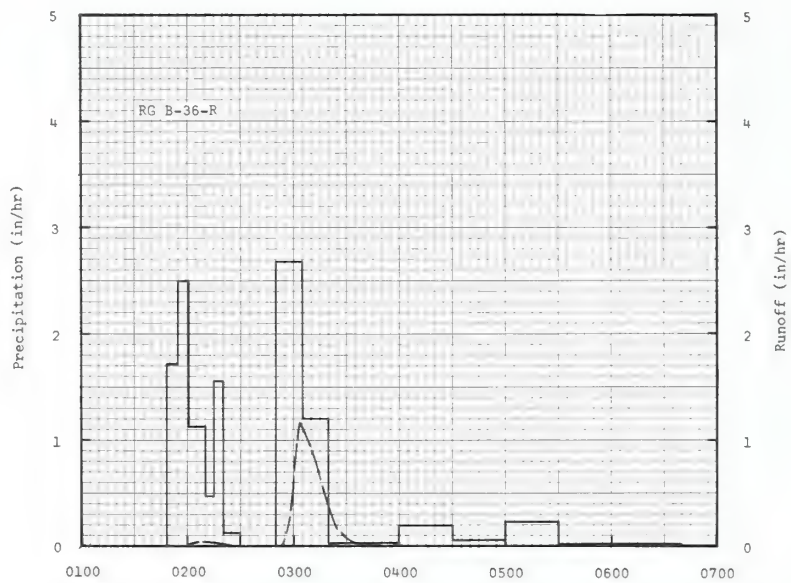
HASTINGS, NEBRASKA WATERSHED W-11

MONTHLY PRECIPITATION AND RUNOFF (inches)						HASTINGS, NEBRASKA						WATERSHED 1-B				
						AREA-3.62 ACRES										
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	P 1/	2/ .12	2/ .15	2/ .13	1.62	4.77	6.39	3.12	.33	4.37	1.17	2/ .10	2/ .50	22.77		
	Q	T	.00	.00	.00	.00	.81	.34	.00	.00	.00	.00	.00	1.15		
STA AV ³ /P		.30	.52	1.09	1.87	3.64	4.99	2.97	2.66	2.69	1.13	.58	.37	22.81		
(40-62) Q		.01	.01	.04	.00	.17	.15	.09	.05	.01	.01	.00	.00	.54		
MEAN P 4/																
72 YR		.47	.78	1.19	2.27	3.32	4.28	3.18	2.71	2.67	1.39	.87	.62	23.75		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	7-8	1.76	7-8	.34	6-11	.35E	6-11	.35E	6-11	.35E	6-10	.62E	6-10	.62E	6-7	.65
MAXIMUMS FOR PERIOD OF RECORD																
1939 TO	6-12	2.35	5-21	1.35	5-21	1.78	5-21	2.00	5-21	3.69	5-21	3.69	5-21	3.69	5-21	4.27
1967	1965		1965		1965		1965		1965		1965		1965		1965	
NOTES: Watershed conditions: Cultivated, planted to wheat in Sept. 1966. 1/ Precipitation from rain gage B-36-R. 2/ Based on meteorological station records. 3/ Station records began 1939, part year records for 1939 not included in station averages. 4/ Mean P based on 72-yr (1893-1964) U.S. Weather Bureau record period at Red Cloud, Nebr.																
1967 SELECTED RUNOFF EVENT						HASTINGS, NEBRASKA				WATERSHED 1-B				44.5		
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE	RAINFALL	RUNOFF	DATE	TIME	INTENSITY	ACC.	DATE	TIME	RATE	ACC.						
MO-DAY	(inches)	(inches)	MO-DAY	OF DAY	(in/hr)	(inches)	MO-DAY	OF DAY	(in/hr)	(inches)						
Event of July 8, 1967																
RG B-36-R			RG			B-36-R										
6-9	.43	.00	7-8	0148	.00	.00	7-8	0255	.00	.00						
6-10	1.11	.27E		0155	1.71	.20		0301	.18	.01						
6-11	.90	.35E		0201	2.50	.45		0307	1.76	.11						
6-15	.18	.00		0210	1.13	.62		0312	1.01	.23						
6-20	.35	.00		0215	.48	.66		0317	.54	.30						
6-21	1.11	.16E		0220	1.56	.79		0322	.18	.33						
6-23	.15	.00		0230	.12	.81		0332	.01	.34						
6-24	.55	.00		0250	.00	.81		0340	.00	.34						
6-28	.16	.00		0305	2.68	1.48										
7-4	.04	.00		0320	1.20	1.78										
7-5	.06	.00		0400	.03	1.80										
				0430	.20	1.90										
				0500	.06	1.93										
				0530	.24	2.05										
				0640	.02	2.07										
Watershed conditions: In wheat, nearly ripe. 24" to 48" high, in good condition with ground cover 75%.																
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 3.650. FOR MAP OF AREA, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA, MISC. PUB. 945, P. 44.5-4.																



HASTINGS, NEBRASKA WATERSHED 1-H

MONTHLY PRECIPITATION AND RUNOFF (inches)						HASTINGS, NEBRASKA AREA-3.40 ACRES WATERSHED 2-R										
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967 P 1/ Q	2/.12 .00	2/.15 .00	2/.13 .00	1.61 .00	4.74 .00	6.42 .21	3.16 .33	.35 .00	4.37 T .00	1.22 .00	2/.10 .00	2/.50 .00	22.87 .54			
STA AV3/P (40-67) Q	.31 .03	.57 .03	1.13 .22	1.87 .19	3.68 .91	4.86 1.38	3.21 .72	2.70 .37	2.74 .45	1.18 .21	.64 .04	.41 .00	23.30 4.55			
MEAN P 4/ 72 YR	.47	.78	1.19	2.27	3.32	4.28	3.18	2.71	2.67	1.39	.87	.62	23.75			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		5 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	7-8	1.17	7-8	.33	7-8	.33	7-8	.33	7-8	.33	7-8	.33	7-8	.33	7-8	.33
MAXIMUMS FOR PERIOD OF RECORD																
1939 TO 1967	6-12 1965	3.47	5-21 1965	2.38	5-21 1965	2.40	5-21 1965	2.58	5-21 1965	5.21	5-21 1965	5.30	5-21 1965	5.30	5-21 1965	5.49
NOTES: Watershed conditions: Native grass pasture, good stand moderately grazed (one-half of top growth consumed). 1/ Arithmetic average precipitation from rain gages B-34-R and B-36-R. 2/ Based on meteorological station records. 3/ Station records began April 1, 1939; part year records for 1939 and period of no records, 1955 through 1957, not included in station averages. 4/ Mean P based on 72-yr (1893-1964) U.S. Weather Bureau record period at Red Cloud, Nebr.																
1967 SELECTED RUNOFF EVENT						HASTINGS, NEBRASKA						WATERSHED 2-R 44.6				
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
Event of July 8, 1967																
RG B-36-R				RG	B-36-R											
6-9	.43	.00	7-8	0148	.00	.00	7-8	0201	.00	.00						
6-10	1.11	.03		0155	1.71	.20		0207	.02	.00						
6-11	.90	.18		0201	2.50	.45		0221	.00	.00						
6-15	.18	.00		0210	1.13	.62		0243	.00	.01						
6-20	.35	.00		0215	.48	.66		0253	.00	.01						
6-21	1.11	T		0220	1.56	.79		0259	.28	.02						
6-23	.15	.00		0230	.12	.81		0304	1.17	.08						
6-24	.55	.00		0250	.00	.81		0310	.90	.18						
6-28	.16	.00		0305	2.68	1.48		0315	.63	.25						
7-4	.04	.00		0320	1.20	1.78		0325	.17	.31						
7-5	.06	.00		0400	.03	1.80		0336	.03	.33						
				0430	.20	1.90		0413	.00	.33						
				0500	.06	1.93										
				0530	.24	2.05										
				0640	.02	2.07										
Watershed conditions: 100% native grass pasture. Grass 4" to 10" high with moderate grazing. Grass in good condition. Ground cover 90%.																
				RG	B-34-R	2.10										
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 3.428. FOR MAP OF AREA, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 44.6-3.																

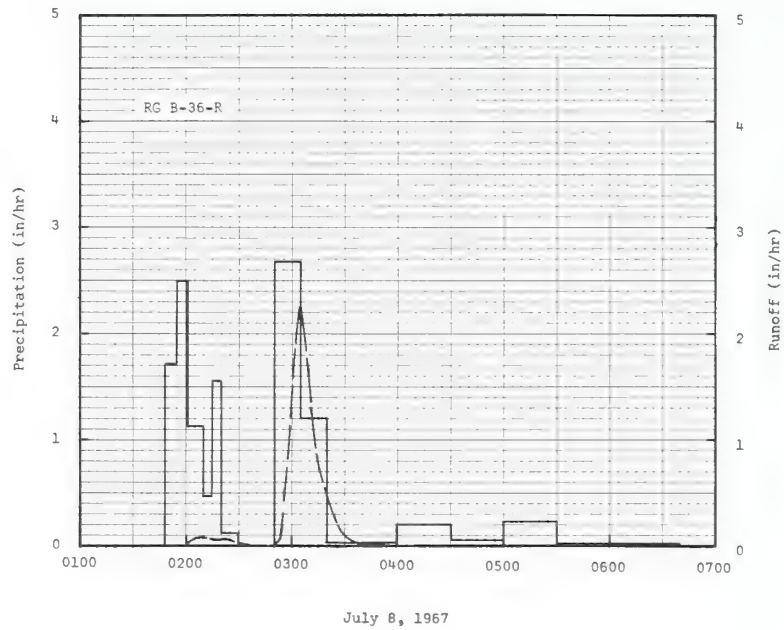


July 8, 1967

HASTINGS, NEBRASKA WATERSHED 2-H

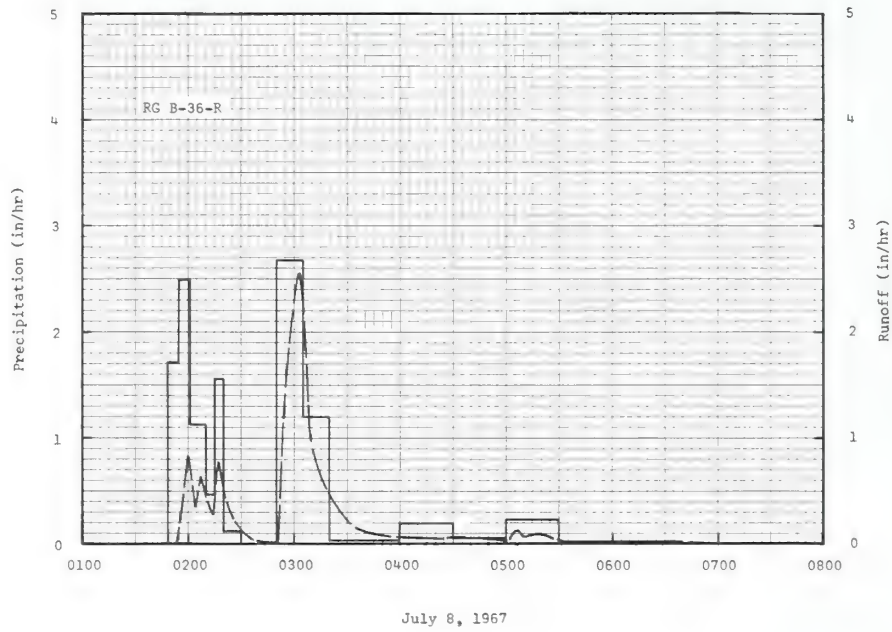
MONTHLY PRECIPITATION AND RUNOFF (inches)						HASTINGS, NEBRASKA				WATERSHED 3-B				44.7		
						AREA-3.77 ACRES										
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	P 1/	2/.12	2/.15	2/.13	1.60	4.72	6.45	3.19	.37	4.37	1.27	2/.10	2/.50	22.97		
	Q	.04	.10	.00	.00	.05	1.31	.62	.00	.01	.00	.00	.00	2.13		
STA AV3/P		.31	.57	1.13	1.87	3.68	4.86	3.22	2.70	2.74	1.19	.64	.41	23.32		
(40-67) Q		.03	.06	.25	.20	.94	1.44	.77	.37	.45	.21	.04	.00	4.76		
MEAN P 4/																
72 YR		.47	.78	1.19	2.27	3.32	4.28	3.18	2.71	2.67	1.39	.87	.62	23.75		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	7-8	2.27	7-8	.58	7-8	.62	7-8	.62	7-8	.62	6-10	.82	6-10	.82	6-5	1.03
MAXIMUMS FOR PERIOD OF RECORD																
1939 TO	7-3	6.45	7-3	2.34	7-3	2.35	6-1	3.36	5-21	4.48	5-21	4.80	5-21	4.80	5-21	5.38
1967	1959		1959		1959		1951		1965		1965		1965		1965	
NOTES: Watershed conditions: Cultivated, planted to wheat in Sept. 1966. General crop rotation of wheat-sorghum-fallow, using minimum tillage practices. 1/ Precipitation from rain gage B-34-R. 2/ Based on meteorological station records. 3/ Station records began Mar. 27, 1939; part year records for 1939 and period of no records, 1955 through 1957, not included in station averages. 4/ Mean P based on 72-yr (1893-1964) U.S. Weather Bureau record period at Red Cloud, Nebr.																
1967 SELECTED RUNOFF EVENT						HASTINGS, NEBRASKA				WATERSHED 3-B				44.7		
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
Event of July 8, 1967																
	2 RG5/			RG	B-36-R											
6- 9	.42	.01	7-8	0148	.00	.00	7-8	0200	.00	.00						
6-10	1.10	.36		0155	1.71	.20		0206	.09	.00						
6-11	.91	.46		0201	2.50	.45		0212	.09	.01						
6-15	.12	.00		0210	1.13	.62		0218	.05	.02						
6-20	.44	.00		0215	.48	.66		0222	.07	.02						
6-21	1.04	.17		0220	1.56	.79		0230	.02	.03						
6-23	.23	.01		0230	.12	.81		0238	.00	.03						
6-24	.52	.06		0250	.00	.81		0246	.00	.03						
6-28	.20	.00		0305	2.68	1.48		0253	.06	.03						
7- 4	.06	.00		0320	1.20	1.78		0258	.93	.07						
7- 5	.08	.00		0400	.03	1.80		0305	2.27	.28						
				0430	.20	1.90		0313	.88	.49						
				0500	.06	1.93		0325	.22	.59						
				0530	.24	2.05		0337	.03	.61						
				0640	.02	2.07		0400	.00	.62						
Watershed conditions: In wheat, ripe. 24" to 48" high in good condition with ground cover 75%.																
				RG	B-34-R	2.10										
				2 RG	AVG5/	2.04										
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 3.802. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 44.7-4. 5/ ARITHMETIC AVERAGE OF 2 RAIN GAGES B-36-R AND B-34-R.																

Cooperative Research Project of USDA and Nebraska Agricultural Experiment Station



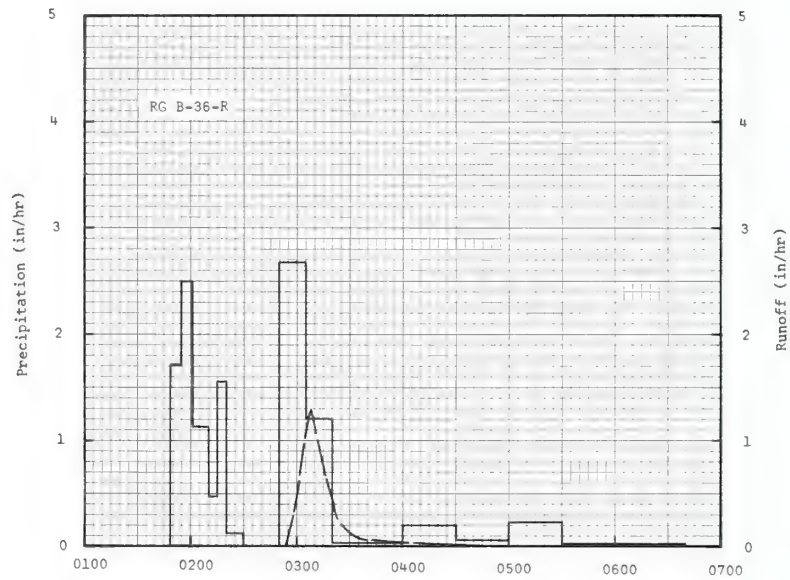
HASTINGS, NEBRASKA WATERSHED 3-H

MONTHLY PRECIPITATION AND RUNOFF (inches)						HASTINGS, NEBRASKA								WATERSHED 4-R		44.8
						AREA-3.64 ACRES										
YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967 P ¹ / _Q	2/.12 .00	2/.15 .00	2/.13 .00	1.61 .00	4.74 .06	6.42 1.35	3.16 1.10	.35 .00	4.37 .35	1.22 .23	2/.10 .00	2/.50 .00	22.87 3.09			
STA AV ³ / _P (40-67) Q	.31 .02	.57 .02	1.13 .22	1.91 .18	3.66 1.02	4.82 1.32	3.19 .72	2.68 .35	2.76 .44	1.17 .19	.63 .02	.40 .00	23.23 4.50			
MEAN P ⁴ / _{72 YR}	.47	.78	1.19	2.27	3.32	4.28	3.18	2.71	2.67	1.39	.87	.62	23.75			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
	DATE	RATE	1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
1967	7-8	2.54	7-8	.71	7-8	.99	7-8	1.09	7-8	1.09	7-8	1.09	7-8	1.09	7-8	1.09
MAXIMUMS FOR PERIOD OF RECORD																
19 40 TO 19 65	6-26 1952	7.67	7-3 1959	2.13E	5-21 1965	2.57	6-1 1951	3.19	5-21 1965	5.94	5-21 1965	6.37	5-21 1965	6.37	5-21 1965	7.21
NOTES: Watershed conditions: Cultivated, planted to sorghum. General crop rotation of sorghum-fallow-wheat, using minimum tillage practices. 1/ Arithmetic average precipitation from rain gages B-34-R and B-36-R. 2/ Based on meteorological station records. 3/ Station records began Apr. 1, 1939; part year records for 1939 and period of no records, 1955 through 1957, not included in station averages. 4/ Mean P based on 72-yr (1893-1964) U.S. Weather Bureau record period at Red Cloud, Nebr.																
1967 SELECTED RUNOFF EVENT						HASTINGS, NEBRASKA								WATERSHED 4-R		44.8
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
Event of July 8, 1967																
6- 9	2 RG 5/ .43	.00	7-8	RG	B-36-R	.00	7-8	0153	.00	.00						
6-10	1.11	.00		0148	.00	.20		0200	.83	.05						
6-11	.90	.00		0155	1.71	.45		0204	.36	.09						
6-15	.18	.00		0201	2.50	.62		0207	.61	.12						
6-20	.35	.00		0210	1.13	.66		0213	.29	.16						
				0215	.48											
6-21	1.11	.00		0220	1.56	.79		0217	.79	.20						
6-23	.15	.00		0230	.12	.81		0227	.18	.26						
6-24	.55	.00		0250	.00	.81		0237	.03	.28						
6-28	.16	.00		0305	2.68	1.48		0249	.01	.28						
7- 4	.04	.00		0320	1.20	1.78		0254	1.15	.31						
7- 5	.06	.00		0400	.03	1.80		0303	2.54	.56						
				0430	.20	1.90		0308	1.36	.72						
				0500	.06	1.93		0319	.46	.89						
				0530	.24	2.05		0334	.17	.95						
				0640	.02	2.07		0344	.12	.98						
								0354	.08	.99						
								0415	.05	1.01						
								0424	.04	1.02						
								0429	.08	1.02						
								0502	.02	1.05						
								0507	.13	1.05						
								0512	.08	1.06						
								0516	.10	1.07						
								0526	.07	1.08						
								0536	.02	1.09						
								0706	.00	1.09						
Watershed conditions: In sorghum, 2" to 10" high and in good condition. Ground cover of 5%.																
				RG	B-34-R	2.10										
				2 RG	AVG ⁵ /	2.04										
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 3.670. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 44.8-3. 5/ ARITHMETIC AVERAGE OF 2 RG B-36-R AND B-34-R.																



HASTINGS, NEBRASKA WATERSHED 4-H

MONTHLY PRECIPITATION AND RUNOFF (inches)						HASTINGS, NEBRASKA				AREA 4.02 ACRES				WATERSHED 5-H		
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967 P1/ Q	2/.12 .00	2/.15 .01	2/.13 .00	1.61 .00	4.74 .07	6.42 .47	3.16 .37	.35 .00	4.37 .66	1.22 .29	2/.10 .00	2/.50 .00	22.87 1.87			
STA AV3/P (40-67) Q	.30	.54	1.07	1.83	3.53	4.76	3.08	2.56	2.78	1.12	.59	.38	22.54			
MEAN P 4/ 72 YR	.03	.03	.15	.09	.72	1.02	.48	.28	.26	.11	.02	.00	3.19			
	.47	.78	1.19	2.27	3.32	4.28	3.18	2.71	2.67	1.39	.87	.62	23.75			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	9-19	1.64	7-8	.36	7-8	.37	7-8	.37	7-8	.37	6-10	.42	6-10	.42	9-19	.66
MAXIMUMS FOR PERIOD OF RECORD																
1939 TO 1967	6-14 1960	4.24	7-3 1959	1.75	5-21 1965	2.26	5-21 1965	2.78	5-21 1965	5.41	5-21 1965	5.77	5-21 1965	5.77	5-21 1965	6.37
NOTES: Watershed conditions: Cultivated, fallowed, planted to wheat in September. General crop rotation of fallow-wheat-sorghum, using tillage practices. 1/ Precipitation from rain gage B-36-R. 2/ Based on meteorological station records. 3/ Station records began Apr. 1, 1939; part year records for 1939 and period of no record, 1957, not included in station averages. 4/ Mean P based on 72-yr (1893-1964) U.S. Weather Bureau record period at Red Cloud, Nebr.																
1967 SELECTED RUNOFF EVENT						HASTINGS, NEBRASKA				WATERSHED 5-H				44.9		
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
Event of July 8, 1967																
6- 9	2 RG 5/ .43	.01	7-8	RG 0148	B-36-R .00	.00	7-8	0253	.00	.00						
6-10	1.11	.17		0155	1.71	.20		0301	.61	.03						
6-11	.90	.25		0201	2.50	.45		0308	1.27	.16						
6-15	.18	.00		0210	1.13	.62		0313	.78	.23						
6-20	.35	.00		0215	.48	.66		0320	.43	.30						
6-21	1.11	T		0220	1.56	.79		0330	.11	.34						
6-23	.15	.00		0230	.12	.81		0340	.06	.35						
6-24	.55	T		0250	.00	.81		0355	.03	.36						
6-28	.16	.00		0305	2.68	1.48		0415	.01	.37						
7- 4	.04	.00		0320	1.20	1.78		0445	.00	.37						
7- 5	.06	.00		0400	.03	1.80										
				0430	.20	1.90										
				0500	.06	1.93										
				0530	.24	2.05										
				0640	.02	2.07										
Watershed conditions: In fallow, using minimum tillage practices. Estimated ground cover 10%.																
				RG	B-34-R	2.10										
				2 RG	AVG5/ 2.04	2.04										
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 4.054. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 44.9-4. 5/ ARITHMETIC AVERAGE OF 2 RG B-36-R AND B-34-R.																

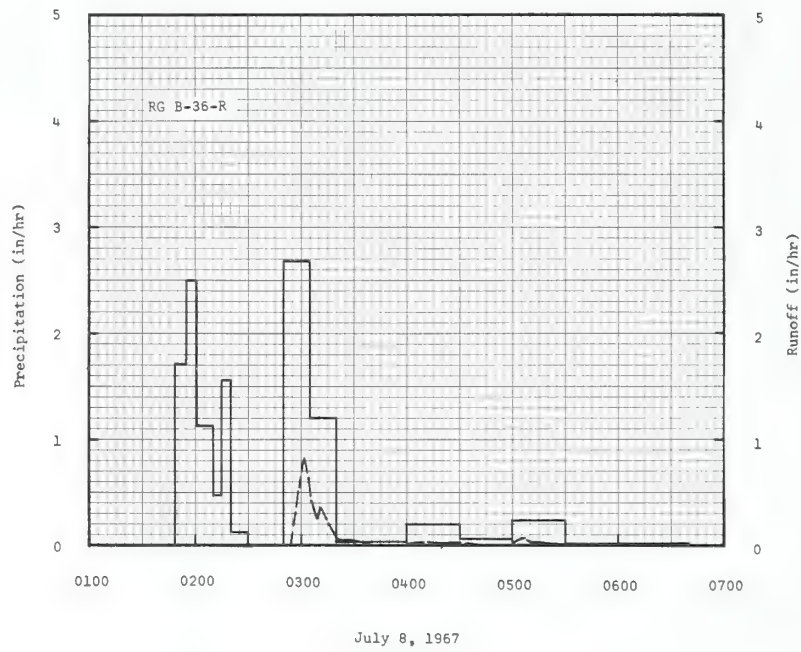


July 8, 1967

HASTINGS, NEBRASKA WATERSHED 5-H

MONTHLY PRECIPITATION AND RUNOFF (inches)						HASTINGS, NEBRASKA					WATERSHED 6-H					
						AREA-4.01 ACRES										
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	P1/Q	2/.12 .00	2/.15 .00	2/.13 .00	1.62 .00	4.77 .08	6.39 .41	3.12 .20	.33 .00	4.37 .69	1.17 .27	2/.10 .00	2/.50 .00	22.77 1.65		
STA AV (40-67)	3/P Q	.30 .02	.54 .03	1.07 .14	1.83 .09	3.53 .77	4.76 1.09	3.08 .54	2.56 .26	2.78 .39	1.12 .09	.59 .03	.38 .00	22.54 3.45		
MEAN P	4/ 72 YR	.47	.78	1.19	2.27	3.32	4.28	3.18	2.71	2.67	1.39	.87	.62	23.75		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	9-19	1.87	9-19	.37	9-19	.37	9-19	.45	9-19	.45	9-19	.51	9-19	.51	9-19	.76
MAXIMUMS FOR PERIOD OF RECORD																
1939 TO 1967	5-22 1954	5.70	7-10 1951	1.66	5-21 1965	2.26E	5-21 1965	2.78E	5-21 1965	5.41E	5-21 1965	5.77E	5-21 1965	5.77E	5-21 1965	6.37E
NOTES: Watershed conditions: Cultivated, fallow, planted to wheat in September. General crop rotation of fallow-wheat-sorghum, using minimum tillage practices. 1/ Precipitation from rain gage B-36-R. 2/ Based on meteorological station records. 3/ Station records began Apr. 1, 1939; part year records for 1939 and period of no record 1957, not included in station averages. 4/ Mean P based on 72-yr (1893-1964) U.S. Weather Bureau record period at Red Cloud, Nebr.																
1967 SELECTED RUNOFF EVENT						HASTINGS, NEBRASKA					WATERSHED 6-H					44.10
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
Event of July 8, 1967																
RG B-36-R				RG	B-36-R											
6-9	.43	.02	7-8	0148	.00	.00	7-8	0253	.00	.00						
6-10	1.11	.13		0155	1.71	.20		0257	.24	.00						
6-11	.90	.19		0201	2.50	.45		0302	.81	.05						
6-15	.18	.00		0210	1.13	.62		0305	.48	.09						
6-20	.35	.00		0215	.48	.66		0308	.25	.11						
6-21	1.11	.01		0220	1.56	.79		0311	.37	.12						
6-23	.15	.00		0230	.12	.81		0315	.24	.14						
6-24	.55	T		0250	.00	.81		0321	.07	.15						
6-28	.16	.00		0305	2.68	1.48		0328	.04	.16						
7-4	.04	.00		0320	1.20	1.78		0338	.02	.17						
7-5	.06	.00		0400	.03	1.80		0406	.01	.17						
				0430	.20	1.90		0411	.04	.17						
				0500	.06	1.93		0422	.01	.18						
				0530	.24	2.05		0426	.02	.18						
				0640	.02	2.07		0439	.00	.18						
Watershed conditions: In fallow, using minimum tillage practices. Estimated ground cover 10%.																
								0459	.00	.18						
								0504	.07	.18						
								0510	.03	.19						
								0517	.03	.19						
								0529	.00	.20						
								0703	.00	.20						
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 4.044. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 44.10-1.																

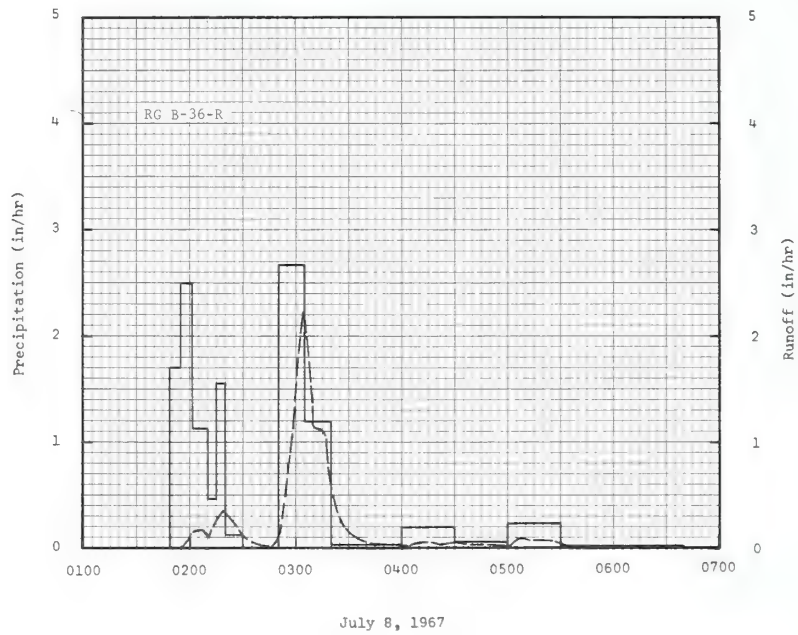
Cooperative Research Project of USDA and Nebraska Agricultural Experiment Station



HASTINGS, NEBRASKA WATERSHED 6-H

MONTHLY PRECIPITATION AND RUNOFF (inches)						HASTINGS, NEBRASKA				WATERSHED 7-B						
						AREA-4.26 ACRES										
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967 P1/ Q	2/.12 .00	2/.15 .00	2/.13 .00	1.62 .00	4.77 .08	6.39 .91	3.12 .83	.33 .00	4.37 .21	1.17 .17	2/.10 .00	2/.50 .00	22.77 2.20			
STA AV3/P (40-67) Q	.30 .02	.54 .03	1.07 .15	1.83 .09	3.53 .70	4.76 .89	3.08 .45	2.56 .19	2.78 .36	1.12 .09	.59 .03	.38 .00	22.54 3.00			
MEAN P 4/ 72 YR	.47	.78	1.19	2.27	3.32	4.28	3.18	2.71	2.67	1.39	.87	.62	23.75			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	7-8	2.22	7-8	.66	7-8	.77	7-8	.83	7-8	.83	7-8	.83	7-8	.83	7-8	.83
MAXIMUMS FOR PERIOD OF RECORD																
1939 TO 1967	5-22 1954	4.76	7-3 1959	2.04	7-3 1959	2.06	5-22 1965	3.13	5-21 1965	4.76	5-21 1965	5.06	5-21 1965	5.06	5-21 1965	5.35
NOTES: Watershed conditions: Cultivated, planted to sorghum. General crop rotation of sorghum-fallow-wheat, using minimum tillage practices. 1/ Precipitation from rain gage B-36-R. 2/ Based on meteorological station records. 3/ Station records began Apr. 1, 1939; part year records for 1939 and period of no record for 1957 not included in station averages. 4/ Mean P based on 72-yr (1893-1964) U.S. Weather Bureau record period at Red Cloud, Nebr.																
1967 SELECTED RUNOFF EVENT					HASTINGS, NEBRASKA				WATERSHED 7-B				44.11			
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
Event of July 8, 1967																
RG B-36-R			RG				B-36-R									
6-9	.43	.02	7-8	0148	.00	.00	7-8	0157	.00	.00						
6-10	1.11	.18		0155	1.71	.20		0204	.18	.01						
6-11	.90	.28		0201	2.50	.45		0212	.10	.03						
6-15	.18	.00		0210	1.13	.62		0220	.34	.06						
6-20	.35	.00		0215	.48	.66		0228	.11	.09						
6-21	1.11	.30E		0220	1.56	.79		0233	.05	.10						
6-23	.15	T		0230	.12	.81		0243	.02	.10						
6-24	.55	.11		0250	.00	.81		0250	.13	.10						
6-28	.16	.00		0305	2.68	1.48		0254	.58	.13						
7-4	.04	.00		0320	1.20	1.78		0258	1.11	.18						
7-5	.06	.00		0400	.03	1.80		0304	2.22	.37						
				0430	.20	1.90		0310	1.13	.55						
				0500	.06	1.93		0318	.61	.68						
				0530	.24	2.05		0323	.32	.72						
				0640	.02	2.07		0333	.10	.75						
Watershed conditions: In sorghum, 6" to 12" high in good condition. Ground cover 5%.																
								0338	.05	.76						
				0353	.01	.77		0403	.01	.77						
				0412	.05	.77		0425	.02	.78						
								0428	.04	.78						
								0438	.03	.79						
								0448	.01	.79						
				0501	.01	.79		0506	.10	.80						
				0513	.08	.81		0523	.07	.82						
				0533	.02	.83		0543	.01	.83						
				0643	.00	.83										
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 4.296. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 44.11-4.																

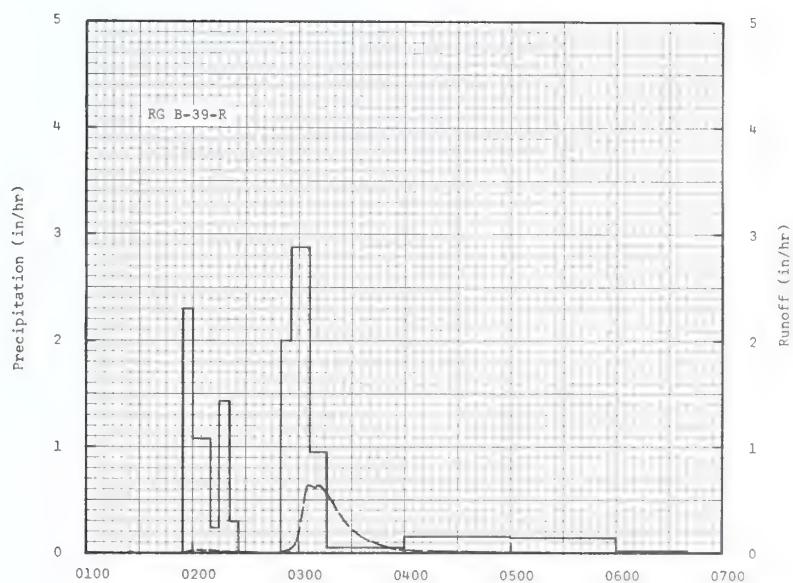
Cooperative Research Project of USDA and Nebraska Agricultural Experiment Station



HASTINGS, NEBRASKA WATERSHED 7-H

MONTHLY PRECIPITATION AND RUNOFF (inches)						HASTINGS, NEBRASKA				WATERSHED 8-H						
						AREA 3.97 ACRES										
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967 P1/ Q	2/.12 .00	2/.15 .00	2/.13 .00	1.62 .00	4.77 .00	6.39 .30	3.12 .25	.33 .00	4.37 .01	1.17 .00	2/.10 .00	2/.50 .00	22.77 .56			
STA AV3/P (40-67) Q	.31 .01	.57 .02	1.13 .09	1.91 .04	3.67 .51	4.82 .63	3.19 .33	2.68 .10	2.76 .19	1.17 .04	.63 .00	.40 .00	23.24 1.96			
MEAN P 4/ 72 YR	.47	.78	1.19	2.27	3.32	4.28	3.18	2.71	2.67	1.39	.87	.62	23.75			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	6-11	.45	6-11	.19	6-11	.19	7-8	.25E	7-8	.25E	6-10	.26	6-10	.26	6-5	.27
MAXIMUMS FOR PERIOD OF RECORD																
1939 TO 1965	6-10 1943	3.66	7-3 1959	1.67	5-22 1965	1.85	6-1 1951	2.35	5-21 1965	4.19	5-21 1965	4.35	5-21 1965	4.35	5-21 1965	4.68
Notes: Watershed conditions: Cultivated, planted to wheat in Sept. 1966. General crop rotation of wheat-sorghum-fallow, using minimum tillage practices. 1/ Precipitation from rain gage B-36-R. 2/ Based on meteorological station records. 3/ Station records began Mar. 27, 1939; part year records for 1939 and period of no records, 1955 through 1957, not included in station averages. 4/ Mean P based on 72-yr (1893-1964) U.S. Weather Bureau record period at Red Cloud, Nebr.																
NO SELECTED RUNOFF EVENT REPORTED FOR 1967. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 44.12-4.																

MONTHLY PRECIPITATION AND RUNOFF (inches)						HASTINGS, NEBRASKA						WATERSHED 18-B				
						AREA 3.74 ACRES										
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967 P ₁ / Q	2/.12 .00	2/.15 .00	2/.13 .00	1.59 .00	4.80 .04	6.45 .89	2.82 .30	.33 .00	4.43 .22	1.35 .04	2/.10 .00	2/.50 .01	22.77 1.50			
STA AV ₃ / (40-67) Q	.29	.55	1.16	2.01	3.93	5.14	3.15	2.90	2.80	1.20	.65	.41	24.19			
MEAN P ₄ / 72 YR	.02	.02	.04	.07	.56	.89	.34	.15	.15	.05	.02	.00	2.31			
	.47	.78	1.19	2.27	3.32	4.28	3.18	2.71	2.67	1.39	.87	.62	23.75			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	7-8	.64	6-11	.32	6-11	.36	6-11	.37	6-11	.37	6-10	.66	6-10	.66	6-5	.70
MAXIMUMS FOR PERIOD OF RECORD																
1939 TO 1967	5-21 1965	2.89	7-3 1959	2.01E	5-21 1965	2.32	5-21 1965	2.86	5-21 1965	5.30	5-21 1965	5.58	5-21 1965	5.58	5-21 1965	6.02
Notes: Watershed conditions: Native grass pasture, heavily grazed, fair cover condition. 1/ Precipitation from rain gage B-39-R. 2/ Based on meteorological station records. 3/ Station records began August 1, 1939; part year records for 1939 and period of no record for 1956 not included in station averages. 4/ Mean P based on 72-yr (1893-1964) U.S. Weather Bureau record period at Red Cloud, Nebr.																
1967 SELECTED RUNOFF EVENT						HASTINGS, NEBRASKA						WATERSHED 18-B				44.22
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
Event of July 8, 1967																
RG B-39-R						RG	B-39-R									
6-9	.39	T	7-8	0154	.00	.00	7-8	0154	.00	.00						
6-10	.93	.30		0200	2.30	.23		0200	.01	.01	T					
6-11	.99	.37		0210	1.08	.41		0208	.02	.02	T					
6-12	.03	.00		0215	.24	.43		0213	.01	.01	T					
6-15	.18	.00		0220	1.44	.55		0250	.00	.01						
6-20	.24	.00		0226	.30	.58		0257	.02	.01						
6-21	1.58	.16		0250	.00	.58		0304	.56	.04						
6-23	.17	T		0256	2.00	.78		0306	.63	.06						
6-24	.57	.04		0306	2.88	1.26		0309	.61	.09						
6-28	.07	.00		0316	.96	1.42		0312	.64	.12						
7-4	.04	.00		0400	.05	1.46		0320	.44	.19						
7-5	.04	.00		0500	.14	1.60		0330	.21	.24						
				0600	.13	1.73		0340	.11	.27						
				0640	.01	1.74		0355	.03	.29						
								0410	.01	.29						
Watershed conditions: In permanent pasture. Heavy grazing began in April. Grass 4" to 10" high. Ground cover estimated at 90%.																
								0610	.00	.30						
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 3.771. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 44.22-4.																



July 8, 1967

HASTINGS, NEBRASKA WATERSHED 18-H

MONTHLY PRECIPITATION AND RUNOFF (inches)						HASTINGS, NEBRASKA								WATERSHED 22-H		
						AREA 3.83 ACRES										
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967 P 1/2/	.08	.14	.24	1.55	5.43	7.07	3.79	.43	4.55	1.21	.15	.49	25.13			
Q	.00	.00	.00	.00	.00	.07	.12	.00	.00	.00	.00	.00	.19			
STA AV3/P/	.25	.53	.85	1.08	3.31	5.52	4.08	2.91	3.96	1.04	.22	.30	24.05			
(62-67) Q	.00	.04	.00	.00	.42	.07	.09	.20	.04	.02	.00	.00	.88			
MEAN P 4/																
72 YR	.47	.78	1.19	2.27	3.32	4.28	3.18	2.71	2.67	1.39	.87	.62	23.75			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	7-8	.56	7-8	.11	7-8	.11	7-8	.11	7-8	.11	7-8	.11	7-8	.11	7-8	.11
MAXIMUMS FOR PERIOD OF RECORD																
1962 TO	8-23	3.18	5-22	1.17	5-22	1.68	5-22	1.72	5-21	2.60	5-21	2.62	5-21	2.62	5-21	2.70
19 67	1962		1965		1965		1965		1965		1965		1965		1965	
NOTES Watershed conditions: Reseeded to native grasses in 1962. Excellent cover condition. 1/ Precipitation from rain gage C-40-R. 2/ Based on meteorological station records. 3/ Precipitation and runoff records under grass cover began June 1, 1962; for comparative data under cultivation (1941-1954) see p. 44-26-1 of 1962 volume. 4/ Mean P based on 72-yr (1893-1964) U. S. Weather Bureau record period at Red Cloud, Nebr.																
NO SELECTED RUNOFF EVENT REPORTED FOR 1967. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES 1962, USDA MISC. PUB. 1070, P. 44.26-3.																

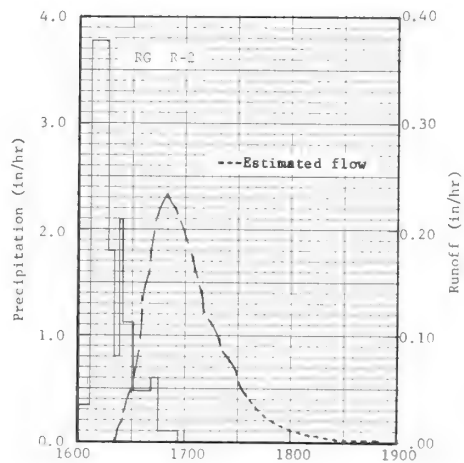
MONTHLY PRECIPITATION AND RUNOFF (inches)						HASTINGS, NEBRASKA						WATERSHED 23-H				
						AREA-4.20 ACRES										
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967 P <u>1/</u> Q	2/.08 .00	2/.14 .00	2/.24 .00	1.55 .00	5.43 .00	7.07 .07	3.79 .10	.43 .00	4.55 .00	1.21 .00	2/.15 .00	2/.49 .00	25.13 .17			
STA AV <u>3/</u> P (62-67) Q	.25 .00	.53 .04	.85 .00	1.08 .00	3.31 .42	5.52 .09	4.08 .13	2.91 .21	3.96 .04	1.04 .01	.22 .00	.30 .00	24.05 .94			
MEAN P <u>4/</u> 72 YR	.47	.78	1.19	2.27	3.32	4.28	3.18	2.71	2.67	1.39	.87	.62	23.75			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	7-8	.43	7-8	.10	7-8	.10	7-8	.10	7-8	.10	7-8	.10	7-8	.10	7-8	.10
MAXIMUMS FOR PERIOD OF RECORD																
19 62 TO 19 67	8-23 1962	3.24	5-22 1965	1.17E	5-22 1965	1.68E	5-22 1965	1.72E	5-22 1965	2.60E	5-21 1965	2.62E	5-21 1965	2.62E	5-21 1965	2.70E
NOTES Watershed conditions: Reseeded to native grasses in 1962. Excellent cover conditions. <u>1/</u> Precipitation from rain gage C-40-R. <u>2/</u> Based on average of rain gages D-45-R and meteorological station records. <u>3/</u> Precipitation and runoff records under grass cover began June 1, 1962; for comparative data under cultivation (1941-1954) see p. 44.27-1 of 1962 volume. <u>4/</u> Mean P based on 72-yr (1893-1964) U. S. Weather Bureau record period at Red Cloud, Nebr.																
NO SELECTED RUNOFF EVENT REPORTED FOR 1967. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES 1962, USDA MISC. PUB. 1070, P. 44.27-3.																

MONTHLY PRECIPITATION AND RUNOFF (inches)						HASTINGS, NEBRASKA				WATERSHED 25-H							
						AREA—2.24 ACRES											
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL				
1967 P 1/ Q	2/ .12 .00	2/ .15 .00	2/ .13 .00	1.62 .00	4.77 .00	6.39 .07	3.12 .10	.33 .00	4.37 .00	1.17 .00	2/ .10 .00	2/ .50 .00	22.77 .17				
STA AV3/P (62-67) Q	.24 .00	.63 .00	.70 .01	1.08 .00	3.60 .53	5.44 .13	3.63 .03	2.34 .00	3.88 .00	.79 .00	.21 .00	.29 .00	22.83 .70				
MEAN P 4/ 72 YR	.47	.78	1.19	2.27	3.32	4.28	3.18	2.71	2.67	1.39	.87	.62	23.75				
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																	
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL														
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS		
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	
1967	7-8	.32	7-8	.09	7-8	.10	7-8	.10	7-8	.10	7-8	.10	7-8	.10	7-8	.10	
MAXIMUMS FOR PERIOD OF RECORD																	
19 63 TO 19 67	5-21 1965	1.75	5-21 1965	.90	5-21 1965	1.53	5-21 1965	2.64	5-21 1965	2.64	5-21 1965	2.64	5-21 1965	2.64	5-21 1965	2.81	
Notes: Watershed conditions: native grass meadow, good cover condition. 1/ Precipitation data obtained from rain gage B-36-R. 2/ Based on meteorological station records. 3/ Station records began April 26, 1963. 4/ Mean P based on 72-yr (1893-1964) U.S. Weather Bureau record period at Red Cloud, Nebr.																	
NO SELECTED RUNOFF EVENT REPORTED FOR 1967. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES 1963, USDA MISC. PUB. 1164, P. 44.29-2.																	

MONTHLY PRECIPITATION AND RUNOFF (inches) 1/							SAFFORD, ARIZONA WATERSHED 45.001 AREA—519.3 ACRES							45.91		
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
P																
Q																
STA AVG P																
Q																
MEAN 2/	.65	.66	.62	.29	.14	.27	1.82	1.74	1.04	.63	.57	.77	9.20			
69 YR																
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	8-23	.24	8-23	.15	8-23	.17	8-23	.17	8-23	.17	8-23	.17	8-23	.17	8-23	.17
MAXIMUMS FOR PERIOD OF RECORD 1/																
19	TO															
19																
NOTES 1/ Not calculated. Data are being reevaluated. As soon as retabulation is completed, revised data will be reported for these two sections. 2/ Mean P based on 69-yr (1899-67) U.S. Weather Bureau record period at Safford, Ariz.																
1967 SELECTED RUNOFF EVENT							SAFFORD, ARIZONA WATERSHED 45.001									
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
Event of August 23, 1967																
	RG R-2		8-23	RG	R-2		8-23									
8-2	.07	.0000		1600	.00	.00		1621E	.000	.0000						
8-4	.54	.0373E		1607	.34	.04		1622	.007	.0001						
8-5	.27	.0000		1617	3.78	.67		1623	.015	.0002						
8-9	.89	.0536E		1620	1.80	.76		1625	.021	.0009						
8-11	.85	.0187E		1623	.80	.80		1626	.027	.0013						
				1625	2.10	.87		1627	.037	.0018						
				1632	1.12	1.00		1628	.044	.0025						
				1642	.48	1.08		1630	.050	.0040						
				1645	.60	1.11		1632	.060	.0059						
				1657	.10	1.13		1633	.069	.0070						
								1634	.085	.0082						
								1635	.103	.0098						
								1637	.131	.0137						
								1638	.146	.0160						
								1639	.158	.0186						
								1641	.179	.0242						
								1643	.199	.0305						
								1645	.218	.0374						
								1647	.225	.0448						
								1650	.233	.0563						
								1652	.225	.0639						
								1655	.218	.0750						
								1700	.193	.0921						
								1704	.173	.1043						
								1706	.160	.1098						
								1709	.142	.1174						
								1712	.125	.1241						
								1715	.111	.1300						
								1719	.097	.1369						
								1722	.085	.1415						
								1725	.069	.1453						
								1730	.056	.1506						
								1732	.051	.1524						
								1735	.042E	.1547E						
								1740	.032E	.1578E						
								1745	.024E	.1602E						
								1750	.019E	.1620E						
								1755	.014E	.1634E						
								1800	.011E	.1644E						
Continued on next page																
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 523.63. FOR TOPOGRAPHIC MAP OF WATERSHED SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, FOR 1960-61, USDA MISC. PUB. 994, P. 45.1-4 (REPRINTED). SELECTED EVENT IS FROM RE-EVALUATED DATA.																

1967 SELECTED RUNOFF EVENT			SAFFORD, ARIZONA WATERSHED 45.001							
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY in/hr	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)
			<u>Event of August 23, 1967 continued</u>							
							8-23	1805	.008E	.1651E
								1810	.006E	.1657E
								1815	.004E	.1661E
								1825	.002E	.1666E
								1835	.001E	.1669E
								1850	.000E	.1671E
								1905	.000E	.1672E
								1945	.000E	.1672E

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 523.63.



August 23, 1967

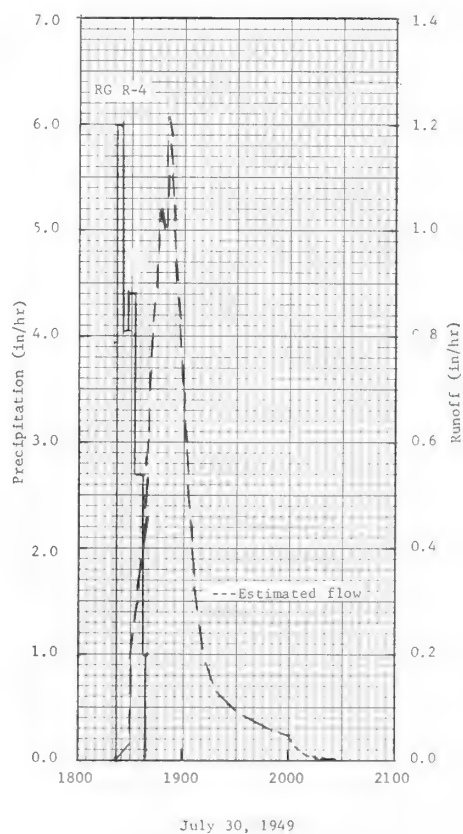
SAFFORD, ARIZONA WATERSHED 45.001

MONTHLY PRECIPITATION AND RUNOFF (inches) 1/							SAFFORD, ARIZONA WATERSHED 45.002 AREA—682.4 ACRES (1.07 SQ. MILES)							45.02		
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
YEAR																
P																
Q																
STA AVG P																
Q																
MEAN P 2/	.65	.66	.62	.29	.14	.27	1.82	1.74	1.04	.63	.57	.77	9.26			
69 YR																
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE	MAXIMUM VOLUME FOR SELECTED TIME INTERVAL														
		1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS		
		DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	
1967		NR		NR		NR		NR		NR		NR		NR		NR
MAXIMUMS FOR PERIOD OF RECORD 1/																
19	TO															
19																
NOTES: 1/ Not calculated. Data are being reevaluated. As soon as retabulation is completed, revised data will be reported for these two sections. 2/ Mean P based on 69-yr (1899-67) U. S. Weather Bureau record period at Safford, Ariz.																
1949 SELECTED RUNOFF EVENT						SAFFORD, ARIZONA WATERSHED 45.002										
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
Event of July 30, 1949																
	RG R-4		7-30	RG	R-4		7-30									
7-3	.09	.0660E		1823	.00	.00		1823	.000E	.0000						
7-4	.20	.0000		1825	6.00	.20		1825	.001	.0000						
7-9	.85	NR		1829	4.05	.47		1826	.001	.0000						
7-11	1.62	.1931E		1832	4.40	.69		1827	.002	.0001						
				1836	2.70	.87		1828	.002	.0001						
7-12	.07	.0000		1839	1.00	.92		1829	.032	.0004						
7-18	.04	.0000						1830	.057	.0011						
7-19	.35	.0203E						1831	.097	.0024						
7-20	.20	.0000						1832	.127	.0043						
7-22	.60	.0612E														
								1833	.244	.0074						
7-23	.05	.0000						1834	.304	.0119						
								1835	.361	.0175						
								1837	.413E	.0304E						
								1839	.504E	.0457E						
								1840	.618	.0550						
								1841	.755	.0665						
								1844	.900	.1078						
								1847	1.094E	.1577E						
								1848	1.181	.1766						
								1850	.945	.2121						
								1851	1.024	.2285						
								1852	1.218	.2472						
								1853	1.082	.2663						
								1854	1.024	.2839						
								1856	.922	.3163						
								1857	.868	.3312						
								1858	.816	.3452						
								1859	.755	.3583						
								1900	.708	.3705						
								1902	.600	.3923						
								1907	.348	.4318						
								1912	.225	.4557						
								1917	.157	.4716						
								1922	.122	.4833						
								1927	.103	.4927						
								1937	.080	.5080						
								1947	.062	.5198						
								1957	.048	.5290						
								2002	.043	.5328						
Watershed conditions: Sparsely vegetated rangeland. About 75% of area is bare. Vegetative cover is about equally divided between short grasses (black, hairy and side-oats grama) and shrubs (creosotebush, beargrass and mesquite).																
Continued on next page																

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 688.08. FOR TOPOGRAPHIC MAP OF WATERSHED SEE SELECTED RUNOFF EVENTS FOR SMALL AGRICULTURAL WATERSHED IN THE UNITED STATES. USDA, ARS. JAN. 1960, P. 45.205. SELECTED EVENT OBTAINED FROM RE-EVALUATED DATA.

1949 SELECTED RUNOFF EVENT			SAFFORD, ARIZONA				WATERSHED 45.002			
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in./hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in./hr)	ACC. (inches)
			<u>Event of July 30, 1949 continued</u>							
							7-30	2003	.031E	.5335E
								2005	.020E	.5343E
								2007	.013E	.5348E
								2009	.008E	.5352E
								2011	.006E	.5354E
								2016	.002E	.5358E
								2021	.001E	.5359E
								2026	.000E	.5359E
								2055	.000E	.5359E

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 688.08.



SAFFORD, ARIZONA WATERSHED 45.002

MONTHLY PRECIPITATION AND RUNOFF (inches) 1/						SAFFORD, ARIZONA WATERSHED 45.004 AREA 764 ACRES (1.19 SQ. MILES) 45.03							
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
YEAR													
P													
Q													
STA AVG P													
Q													
MEAN P 2/													
69 YR	.65	.66	.62	.29	.14	.27	1.82	1.74	1.04	.63	.57	.77	9.20

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	8-11	.11	8-11	.06	8-11	.07	8-11	.07	8-11	.07	8-11	.07	8-11	.07	8-11	.07

MAXIMUMS FOR PERIOD OF RECORD 1/													
19	TO												
19													

NOTES: 1/ Not calculated. Data are being reevaluated. As soon as retabulation is completed, revised data will be reported for these two sections. 2/ Mean P based on 69-yr (1899-67) U.S. Weather Bureau record period at Safford, Ariz.

1967 SELECTED RUNOFF EVENT							SAFFORD, ARIZONA WATERSHED 45.004			
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)
Event of August 11, 1967										
	RG R-9		8-11	RG	R-9		8-11			
7-11	.03	.0000		2020	.00	.00		2158E	.000	.0000
7-13	.17	.0000		2027	.26	.03		2159	.000	.0000
7-16	.42	.0000		2134	.00	.03		2200	.001	.0000
7-20	.06	.0000		2149	.16	.07		2201	.002	.0000
7-24	1.19	NR		2152	1.40	.14		2202	.004	.0001
8-3	.30	.0000		2155	1.40	.21		2203	.008	.0002
8-4	.53	.0045E		2201	1.10	.32		2204	.012	.0004
8-5	.25	.0000		2205	1.95	.45		2205	.015	.0006
8-10	.33	.0001E		2207	3.00	.55		2206	.022	.0009
				2215	1.58	.76		2207	.030	.0013
				2225	.78	.89		2208	.028	.0018
				2228	1.20	.95		2209	.030	.0023
				2300	.13	1.02		2210	.034	.0028
				2339	.03	1.04		2211	.040	.0035
			8-12	0004	.05	1.06		2212	.043	.0041
								2214	.052	.0057
								2215	.050	.0066
								2216	.053	.0074
								2217	.062	.0084
								2220	.070	.0117
								2223	.085	.0156
								2225	.100	.0186
								2226	.106	.0203
								2227	.101	.0221
								2230	.088	.0268
								2235	.071	.0334
								2240	.063	.0390
								2245	.053	.0438
								2247	.045	.0455
								2250	.039	.0476
								2255	.037	.0507
								2257	.047	.0521
								2259	.053	.0538
								2300	.049	.0546
								2305	.047	.0586
								2310	.036	.0620
								2312	.030E	.0631E
								2314	.025E	.0640E
								2316	.021E	.0648E

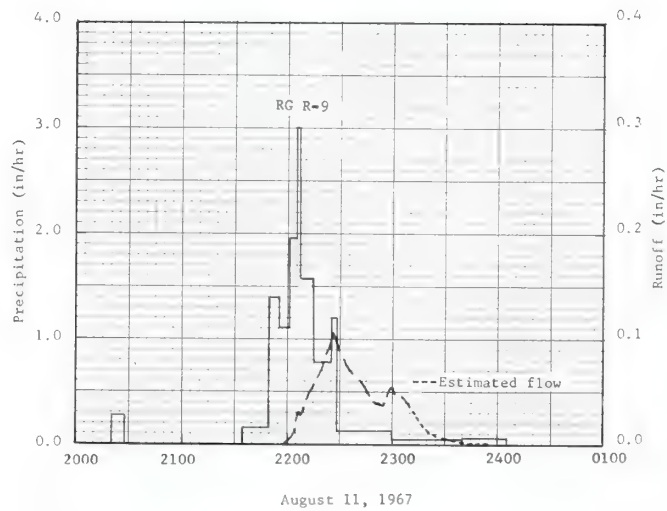
Continued on next page

Watershed conditions: 80% of area is bare. Sparse vegetation is composed entirely of shrubs (creosotebush, snakeweed, cactus, and mesquite) except for trace of short grasses.

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 770.36. FOR TOPOGRAPHIC MAP OF WATERSHED (REPRINTED), SEE HYDROGRAPHIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USDA, MISC. PUB. 994, P. 45.3-4. SELECTED EVENT IS FROM RE-EVALUATED DATA.

1967			SELECTED RUNOFF EVENT				SAFFORD, ARIZONA		WATERSHED 45.004	
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in./hr.)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in./hr.)	ACC. (inches)
			<u>Event of August 11, 1967 continued</u>							
							8-11	2318	.017E	.0654E
								2320	.014E	.0659E
								2323	.010E	.0665E
								2326	.008E	.0670E
								2329	.006E	.0673E
								2332	.004E	.0675E
								2335	.003E	.0677E
								2338	.002E	.0678E
								2343	.001E	.0680E
								2348	.001E	.0681E
								2353	.000E	.0681E
							8-12	2358	.000E	.0682E
								0103	.000E	.0682E

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 770.36.



SAFFORD, ARIZONA WATERSHED 45.004

MONTHLY PRECIPITATION AND RUNOFF (inches) 1/							SAFFORD, ARIZONA WATERSHED 45.005 AREA—723 ACRES (1.13 sq. miles)						
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
YEAR													
P													
Q													
STA AVG P													
Q													
MEAN P 2/	.65	.66	.62	.29	.14	.27	1.82	1.74	1.04	.63	.57	.77	1.20
69 YR													

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		5 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	9-25	.007	9-25	.003	9-25	.003	9-25	.003	9-25	.003	9-25	.003	9-25	.003	9-25	.003

MAXIMUMS FOR PERIOD OF RECORD 1/														
19	TO													
19														

NOTES: 1/ Not calculated. Data are being reevaluated. As soon as retabulation is completed, revised data will be reported for these two sections. 2/ Mean P based on 69-yr (1899-67) U.S. Weather Bureau record period at Safford, Ariz.

1955 SELECTED RUNOFF EVENT				SAFFORD, ARIZONA WATERSHED 45.005						
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)
			Event of July 22, 1955							
	RG R-12		7-22	RG	R-12		7-22			
7-10	.31	.00		1543	.00	.00		1612	.000	.0000
7-13	.05	.00		1607	.08	.03		1613	.001	.0000
7-17	.16	.00		1610	4.20	.24		1614	.022	.0002
7-21	.05	.00		1615	5.16	.67		1617	.025	.0014
7-22	.02	.00		1620	3.60	.97		1618	.066	.0021
				1630	1.98	1.30		1619	.082	.0034
				1650	.30	1.40		1620	.095	.0048
				1800	.02	1.42		1621	.119	.0066
								1622	.167	.0090
								1623	.193	.0120
								1624	.255	.0157
								1625	.299	.0204
								1626	.342	.0257
								1627	.392	.0318
								1628	.451	.0388
								1629	.495	.0467
								1630	.532	.0553
								1631	.564	.0644
								1632	.613	.0742
								1633	.656	.0848
								1634	.700	.0961
								1635	.724	.1080
								1637	.780	.1330
								1639	.841	.1601
								1641	.868	.1886
								1642	.926	.2035
								1643	.830	.2181
								1644	.790	.2316
								1645	.761	.2446
								1646	.728	.2570
								1647	.660	.2685
								1648	.595	.2790
								1649	.540	.2885
								1650	.458	.2968
								1651	.444	.3043
								1652	.378	.3112
								1653	.336	.3171
								1654	.288	.3223
								1655	.266	.3269

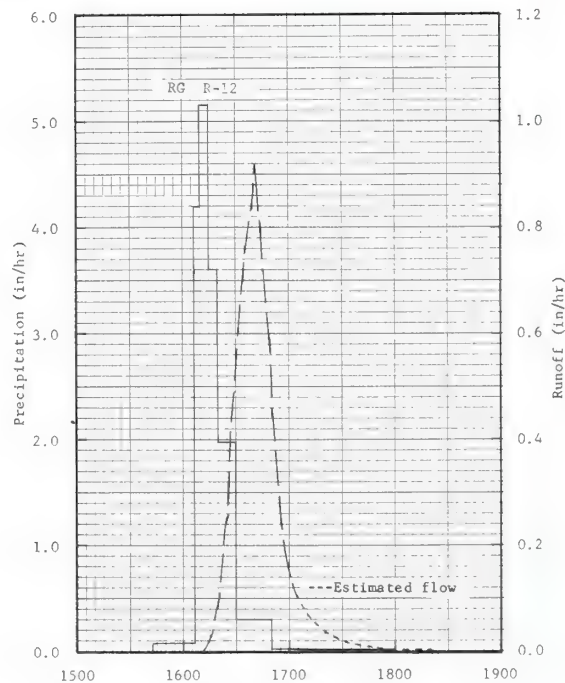
Watershed conditions: About 80% of area is bare. Vegetation consists mostly of short grasses (black grama, sideoats grama, and tobosa), with some shrubs and forbs.

Continued on next page

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 729.02. FOR TOPOGRAPHIC MAP OF WATERSHED SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA, MISC. PUB. 945, P. 45.4-4. SELECTED EVENT IS FROM RE-EVALUATED DATA.

1955 SELECTED RUNOFF EVENT			SAFFORD, ARIZONA WATERSHED 45.005							
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)
			<u>Event of July 22, 1955 continued</u>							
							7-22			
							1656			
							1657			
							1659			
							1701			
							1703			
							1705			
							1710			
							1715			
							1716			
							1718			
							1721			
							1724			
							1727			
							1731			
							1734			
							1739			
							1744			
							1750			
							1756			
							1804			
							1812			
							1822			
							1829			
							2001			

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 729.02.



July 22, 1955

SAFFORD, ARIZONA WATERSHED 45.005

REEVALUATION OF PREVIOUSLY PUBLISHED MONTHLY PRECIPITATION AND RUNOFF (inches) ^{1/}						ALBUQUERQUE, NEW MEXICO WATERSHED 47.601 AREA - 246 ACRES								47.01
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1939	P									1.63	.91	.87	.26	PARTIAL
	Q									.10	.04	NR	NR	PARTIAL
1940	P	.20	1.05	.15	.21	.86	1.00	.90	2.07	1.81	.35	1.62	NR	PARTIAL
	Q	.00	.00	.00	.00	.00	T	T	.07	.04	.00	.01	.00	.12
1941	P	.82	.21	1.76	1.37	2.69	.31	.98	1.75	2.68	1.68	.26	.44	14.95
	Q	.00	.00	.00	.00	.01	.00	.01	.04	.12	.06	.00	.00	.24
1942	P	.00	.26	.00	1.17	.00	1.48	.47	1.96	1.19	.47	.00	.68	7.68
	Q	.00	.00	.00	T	.00	.07	.00	.02	.01	.00	.00	.00	.10
1943	P	.24	.32	.09	.17	1.13	1.89	.49	2.73	.72	.25	.25	1.30	9.58
	Q	.00	.00	.00	.00	.00	.04	.00	.07	.03	.00	.00	.00	.14
1944	P	.20	.22	.46	.21	.52	.33	2.91	1.24	.54	1.42	.70	.82	9.57
	Q	.00	.00	.00	.00	.00	.00	.04	.05	.00	.03	.00	.00	.12
1945	P	.69	.40	.44	.49	.00	.04	.89	.99	.43	.43	.00	.20	5.00
	Q	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
1946	P	.31	.02	.82	.26	.29	.06	.85	2.10	.59	.89	.61	.00	6.80
	Q	.00	.00	.00	.00	.00	.00	T	.07	T	.06	.00	.00	.13
1947	P	.28	.10	.08	.14	.51	.11	.26	1.39	2.90	.20	.21	.76	6.94
	Q	.00	.00	.00	.00	.00	.00	.00	.02	.33	.00	.00	.00	.35
1948	P	.29	1.57	.08	.32	1.26	1.15	.42	1.92	.75	1.52	.08	.21	9.57
	Q	.00	.00	.00	.00	.03	.02	.00	.11	.01	.03	.00	.00	.20
1949	P	.52	.13	.27	.43	1.45	.93	2.81	.50	1.00	.23	.00	.18	8.45
	Q	.00	.00	.00	.00	.00	.01	.10	.00	T	.00	.00	.00	.11
1950	P	.00	.32	.00	.41	.08	.27	1.42	.57	.88	.00	.00	.04	3.99
	Q	.00	.00	.00	.00	.00	T	.02	.02	.00	.00	.00	.00	.04
1951	P	.49	.25	.05	.45	.19	.94	.57	1.46	.24	.15	.14	.31	5.24
	Q	.00	.00	.00	.00	.00	.02	.01	.05	.00	.00	.00	.00	.08
1952	P	.39	.00	.34	.59	.13	1.71	1.22	.72	.46	.00	.52	.17	6.25
	Q	.00	.00	.00	.00	.00	.03	.04	.01	.00	.00	.00	.00	.08
1953	P	.00	.55	1.09	.24	.18	.81	.72	.47	.08	.16	.49	.20	4.99
	Q	.00	.00	.00	.00	.00	.00	.02	.01	.00	.00	.00	.00	.03
1954	P	.17	.06	.27	.00	.55	1.73	1.58	1.47	1.78	.52	.02	.24	8.39
	Q	.00	.00	.00	.00	.00	.14	.03	.10	.22	.03	.00	.00	.52
1955	P	.26	.14	.00	.13	.70	.23	1.36	.76	.32	.03	.00	.10	4.03
	Q	.00	.00	.00	.00	.00	.00	.09	.02	.01	.00	.00	.00	.12
1956	P	.32	.27	.00	.00	.00	.59	.99	.91	.00	.27	.00	.00	3.35
	Q	.00	.00	.00	.00	.00	.00	.00	.08	.00	.00	.00	.00	.08
1957	P	.25	.88	.92	.17	.42	.36	1.53	3.15	.00	1.55	.63	.08	9.94
	Q	.00	.00	.00	.00	.00	.00	.00	.38	.00	.14	.00	.00	.52
1958	P	.48	.10	.99	.77	.08	.34	.04	2.15	1.20	1.24	.06	.38	7.83
	Q	.00	.00	.00	.00	.00	.00	.00	.15	.07	.00	.00	.00	.22
1959	P	.00	.12	.22	.76	.41	.87	1.31	2.12	.00	1.34	.00	.80	7.95
	Q	.00	.00	.00	.00	.00	.01	.05	.04	.00	.02	.00	.00	.12
1960	P	.20	.23	.14	.05	.67	.39	.71	.36	.15	2.33	.00	.70	5.96
	Q	.00	.00	.00	.00	.00	.00	.00	.00	.00	.05	.00	.00	.05
1961	P	.00	.14	.59	.56	.00	1.39	1.00	.57	.35	.97	.49	.40	6.46
	Q	.00	.00	.00	.00	.00	.05	.01	.00	.00	T	.00	.00	.06
1962	P	.65	.00	.00	.00	.00	.17	1.30	.12	1.83	.81	.49	.46	5.83
	Q	.00	.00	.00	.00	.00	.00	.03	.00	.10	.03	.00	.00	.16
1963	P	.09	.27	.25	.00	.00	.13	.67	2.43	.91	.59	.29	.00	5.63
	Q	.00	.00	.00	.00	.00	.00	.00	.03	.03	T	.00	.00	.06
1964	P	.00	.95	.20	.69	.75	.00	1.95	2.16	.53	.00	.10	.37	7.70
	Q	.00	.00	.00	.00	T	.00	.00	.13	.02	.00	.00	.00	.15
1965	P	.36	.40	.29	.86	.46	1.01	2.05	1.53	2.62	.31	.07	1.44	11.40
	Q	.00	.00	.00	.00	.00	.00	.11	.04	.32	.00	.00	.00	.47
1966	P	.42	.30	.00	.03	.04	1.61	.94	2.21	1.92	.00	.00	.07	7.54
	Q	.00	.00	.00	.00	.00	.12	.02	.18	.14	.00	.00	.00	.46

Continued on next page

^{1/} Tables show results or reevaluation of previously published data.

Cooperative Research Project of USDA and New Mexico Agricultural Experiment Station

REEVALUATION OF PREVIOUSLY PUBLISHED 1/ MONTHLY PRECIPITATION AND RUNOFF (inches)							ALBUQUERQUE, NEW MEXICO WATERSHED 47.001 AREA - 246 ACRES					47.01		
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1967	P	.00	.10	.06	.00	.08	1.19	2.25	4.08	1.56	NR	NR	NR	PARTIAL
	Q	.00	.00	.00	.00	.00	.07	.20	.53	.07	NR	NR	NR	PARTIAL
STA AV2/ P (39-67) Q		.27	.33	.34	.37	.48	.75	1.16	1.57	1.00	.66	.28	.39	3/7.60
		.00	.00	.00	T	T	.02	.02	.08	.06	.02	T	.00	.20
MEAN P 4/ 76 YR		.36	.34	.39	.55	.63	.60	1.41	1.29	.89	.78	.42	.46	8.12

REEVALUATION OF PREVIOUSLY PUBLISHED 1/ ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS 5/																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1939	9-14	.18	9-14	.09	9-14	.10	9-14	.10	9-14	.10	9-14	.10	9-14	.10	9-14	.10
1940	8-20	.19	8-20	.06	8-20	.06	8-20	.06	8-20	.06	8-20	.06	8-20	.06	8-20	.06
1941	9-20	.22	9-20	.05	9-20	.05	10-3	.06	10-3	.06	10-3	.06	9-20	.07	9-29	.09
1942	6-30	.29E	6-30	.07E	6-30	.07E	6-30	.07E	6-30	.07E	6-30	.07E	6-30	.07E	6-30	.07E
1943	8-4	.09	6-28	.03	6-28	.03	6-28	.04	6-28	.04	6-28	.04	6-28	.04	6-28	.07
1944	8-17	.12	8-17	.04	8-17	.04	8-17	.04	8-17	.04	8-17	.04	8-17	.04	8-17	.04
1945		.00		.00		.00		.00		.00		.00		.00		.00
1946	10-4	.26	10-4	.05	10-4	.05	10-4	.05	10-4	.05	10-4	.04	10-4	.04	10-4	.04
1947	9-8	.62	9-8	.18	9-8	.18	9-8	.18	9-8	.18	9-8	.18	9-8	.18	9-4	.28
1948	8-4	.26	8-4	.06	8-4	.06	8-4	.11	8-4	.11	8-4	.11	8-4	.11	8-4	.11
1949	7-23	.24	7-23	.07	7-23	.09	7-23	.09	7-23	.09	7-23	.09	7-23	.09	7-23	.09
1950	8-15	.07	8-15	.02	8-15	.02	8-15	.02	8-15	.02	8-15	.02	8-15	.02	8-15	.02
1951	8-28	.14	8-28	.02	8-28	.02	8-28	.02	8-28	.02	8-28	.02	8-28	.02	8-28	.05
1952	7-23	.09	6-2	.02	6-2	.03	6-2	.03	6-2	.03	6-2	.03	6-2	.03	6-2	.03
1953	7-30	.06	7-30	.02	7-30	.02	7-30	.02	7-30	.02	7-30	.02	7-30	.02	7-30	.02
1954	8-10	.43	6-30	.10	6-30	.11	6-30	.11	6-30	.11	9-11	.16	9-11	.16	9-11	.16
1955	7-22	.26	7-22	.07	7-22	.07	7-22	.07	7-22	.07	7-22	.07	7-22	.07	7-22	.07
1956	8-19	.39	8-19	.06	8-19	.06	8-19	.06	8-19	.06	8-19	.06	8-19	.06	8-19	.06
1957	8-24	.92	8-24	.22	8-24	.22	8-24	.22	8-24	.22	8-24	.22	8-24	.22	8-24	.28
1958	8-21	.28	8-21	.08	8-21	.13	8-21	.13	8-21	.13	8-21	.13	8-21	.13	8-21	.13
1959	8-14	.13	8-14	.04	8-14	.04	8-14	.04	8-14	.04	8-14	.04	8-14	.04	8-14	.04
1960	10-17	.02	10-17	.01	10-17	.01	10-17	.03	10-17	.03	10-17	.03	10-15	.05	10-15	.05
1961	6-15	.13	6-15	.05	6-15	.05	6-15	.05	6-15	.05	6-15	.05	6-15	.05	6-15	.05
1962	9-26	.25	9-26	.10	9-26	.10	9-26	.10	9-26	.10	9-26	.10	9-26	.10	9-26	.10
1963	9-5	.09	9-5	.03	9-5	.03	9-5	.03	9-5	.03	9-5	.03	9-5	.03	8-29	.04
1964	8-3	.15	8-3	.09	8-3	.10	8-3	.10	8-3	.10	8-3	.10	8-3	.10	8-3	.10
1965	7-31	.49	9-12	.15	9-12	.15	9-12	.15	9-12	.15	9-12	.15	9-11	.21	9-11	.21
1966	6-10	.77	6-10	.12	6-10	.12	6-10	.12	6-10	.12	6-10	.12	6-10	.12	6-10	.12
1967	8-11	.59	8-11	.29	8-11	.29	8-11	.29	8-11	.29	8-11	.29	8-11	.29	8-11	.53
MAXIMUMS FOR PERIOD OF RECORD																
1939 TO	8-24		8-11		8-11		8-11		8-11		8-11		8-11		8-11	
1967	1957	.92	1967	.29	1967	.29	1967	.29	1967	.29	1967	.29	1967	.29	1967	.53

Notes: Watershed conditions: Rough broken rangeland. About 85% of area is bare. Sparse vegetation consists of short grasses (blue and black grama), shrubs and a few small juniper and pinion trees. 1/ Table shows results or reevaluation of previously data. Thiessen weighted using 2 rain gages. 2/ Precipitation and runoff records began August 1939. Station closed October 1967. 3/ Average yearly total are the sums of the average monthly totals. 4/ Mean P based on 76-yr (1892-1967) U.S. Weather Bureau record period at Albuquerque, N. Mex. 5/ Runoff measuring structure has silted approach and is being re-rated. Runoff rates and volumes are underestimated by a significant amount.

1967 SELECTED RUNOFF EVENT						ALBUQUERQUE, NEW MEXICO		WATERSHED 47.001		
ANTECEDENT CONDITIONS			RAINFALL			RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)
Event of August 11, 1967										
	RG R-7		8-11	RG	R-7		8-11			
7-12	.33	.0000		1240	.00	.00		1333	.000	.0000
7-16	.35	.0543E		1252	.10	.02		1334	.000	.0000
7-17	.78	.1025E		1328	.00	.02		1335	.013	.0001
7-25	.20	.0000		1330	1.20	.06		1336	.094	.0010
7-28	.15	.0000		1332	.60	.08		1337	.128	.0029
7-29	.12	.0000		1339	3.43	.48		1338	.168	.0053
8-1	.42	.0023E		1349	1.50	.73		1339	.194	.0084
8-6	.10	.0000		1352	1.00	.78		1340	.228	.0119
8-8	.10	.0000		1354	2.70	.87		1341	.296	.0162
8-9	.09	.0000		1404	1.32	1.09		1342	.407	.0221
				1410	.50	1.14		1343	.504	.0297
				1441	.31	1.30		1344	.536	.0384
								1346	.593	.0572
								1347	.556	.0668
								1348	.516	.0757
								1349	.460	.0838
								1350	.419	.0911
								1351	.366	.0977
								1352	.390	.1040
								1353	.443	.1109
								1354	.468	.1185
								1355	.508	.1267
								1358	.540	.1529
								1401	.500	.1789
								1402	.447	.1868
								1403	.390	.1937
								1405	.351	.2061
								1408	.320	.2229
								1411	.280	.2379
								1412	.252	.2423
								1414	.210	.2500
								1416	.172	.2564
								1417	.164E	.2592E
								1418	.146E	.2617E
								1421	.121E	.2684E
								1423	.108E	.2722E
								1427	.085E	.2787E
								1429	.070E	.2813E
								1432	.050E	.2843E
								1435	.038E	.2865E
								1438	.025E	.2880E
								1441	.018E	.2891E
								1444	.011E	.2898E
								1449	.006E	.2905E
								1454	.003E	.2909E
								1459	.001E	.2911E
								1504	.001E	.2912E
								1552	.000E	.2912E

Watershed conditions: Sparse vegetation consists of short grasses (blue and black grama), shrubs, and a few small juniper and pinion trees.

August 11, 1967

ALBUQUERQUE, NEW MEXICO WATERSHED 47.001

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 248.05. FOR TOPOGRAPHIC MAP OF WATERSHED, SEE SELECTED RUNOFF EVENTS FOR SMALL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, USDA, ARS, JAN. 1960, P. 47.1-4. REVISED TOPOGRAPHIC MAP NOT AVAILABLE.

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 248.05. FOR TOPOGRAPHIC MAP OF WATERSHED, SEE SELECTED RUNOFF EVENTS FOR SMALL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, USDA, ARS, JAN. 1960, P. 47.1-4. REVISED TOPOGRAPHIC MAP NOT AVAILABLE.

REEVALUATION OF PREVIOUSLY PUBLISHED MONTHLY PRECIPITATION AND RUNOFF (inches) 1/						ALBUQUERQUE, NEW MEXICO WATERSHED 47.002 AREA - 40.1 ACRES							47.02
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1939 P	NR	NR	NR	NR	NR	NR	.91	1.63	1.58	.95	.13	.00	PARTIAL PARTIAL
Q	NR	NR	NR	NR	NR	NR	.10	.21	.31	.12	.00	.00	
1940 P	NR	NR	NR	NR	.89	1.27	1.36	1.91	1.91	.35	1.73	1.34	PARTIAL PARTIAL
Q	NR	NR	NR	NR	.00	T	.06	.13	.10	.00	.02	.00	
1941 P	.88	.31	1.67	1.49	2.80	.69	1.06	1.99	3.16	1.69	.24	.43	16.41 .36
Q	.00	.00	.00	.00	.00	T	T	.01	.21	.14	.00	.00	
1942 P	.00	.22	.00	1.17	.00	1.16	.29	1.93	1.50	.49	.00	.72	7.48 .31
Q	.00	.00	.00	.00	.00	.15	T	.00	.16	.00	.00	.00	
1943 P	.21	.34	.16	.12	.85	2.06	.51	2.35	.86	.24	.25	1.26	9.21 .33
Q	.00	.00	.00	.00	.00	.06	.00	.12	.15	.00	.00	.00	
1944 P	.20	.17	.49	.12	.59	.16	3.49	1.38	.56	1.48	.67	.86	10.17 .89
Q	.00	.00	.00	.00	.00	.00	.25	.22	.00	.42	.00	.00	
1945 P	.58	.29	.40	.37	.00	.02	.79	1.16	.44	.46	.00	.19	4.70 .00
Q	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
1946 P	.32	.02	.74	.16	.30	.15	1.00	2.41	.57	.92	1.11	.00	7.70 .36
Q	.00	.00	.00	.00	.00	.00	.00	.14	.00	.22	.00	.00	
1947 P	.26	.14	.09	.09	.62	.16	.23	1.42	3.06	.15	.20	.74	7.16 1.10
Q	.00	.00	.00	.00	.00	.00	.00	.01	1.09	.00	.00	.00	
1948 P	.33	1.38	.05	.20	.89	1.06	.37	2.06	.76	1.54	.08	.23	8.95 .69
Q	.00	.00	.00	.00	.05	.03	.00	.47	.00	.14	.00	.00	
1949 P	.54	.20	.25	.53	1.58	1.04	2.77	.69	1.24	.26	.00	.15	9.25 .35
Q	.00	.00	.00	.00	.03	.03	.16	.04	.09	.00	.00	.00	
1950 P	.00	.24	.00	.49	.08	.29	1.70	.78	.91	.00	.00	.05	4.54 .19
Q	.00	.00	.00	.00	.00	.05	.00	.13	.01	.00	.00	.00	
1951 P	.53	.28	.08	.28	.26	.90	.32	1.37	.19	.12	.10	.16	4.59 .59
Q	.00	.00	.00	.00	.00	.22	T	.37	.00	.00	.00	.00	
1952 P	.37	.03	.46	.54	.22	1.67	1.36	.67	.00	.00	.44	.13	5.89 .50
Q	.00	.00	.00	.01	.00	.16	.23	.10	.00	.00	.00	.00	
1953 P	.00	.52	1.03	.28	.22	.71	.59	1.13	.02	.15	.38	.05	5.08 .40
Q	.00	.00	.00	.00	.00	.00	.00	.40	.00	.00	.00	.00	
1954 P	.12	.04	.27	.00	.61	1.73	1.85	1.34	1.15	.44	.03	.19	7.77 2.74
Q	.00	.00	.00	.00	.02	.53	.78	.58	.52	.31	.00	.00	
1955 P	.10	.10	.00	.12	.61	.21	1.00	1.40	.34	.04	.00	.08	4.00 .98
Q	.00	.00	.00	.00	.00	.00	.20	.57	.21	.00	.00	.00	
1956 P	.22	.22	.00	.00	.00	.20	.90	.99	.00	.29	.00	.00	2.82 .54
Q	.00	.00	.00	.00	.00	.00	.00	.54	.00	.00	.00	.00	
1957 P	.19	.68	.99	.20	.53	.44	1.29	2.70	.00	1.82	.68	.06	9.58 1.39
Q	.00	.00	.00	.00	.00	.04	.15	.92	.00	.28	.00	.00	
1958 P	.39	.10	.92	.88	.00	.42	.11	2.32	1.23	1.25	.08	.30	8.00 .68
Q	.00	.00	.00	.00	.00	.00	.00	.57	.01	.10	.00	.00	
1959 P	.00	.11	.09	.90	.71	1.12	1.13	2.06	.00	1.38	.00	.75	8.25 .94
Q	.00	.00	.00	.00	.12	.39	.14	.29	.00	T	.00	.00	
1960 P	.22	.15	.10	.00	.56	.50	.78	.24	.19	3.01	.00	.76	6.51 .01
Q	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00	
1961 P	.00	.10	.72	.62	.00	.75	1.08	.52	.30	1.05	.62	.43	6.19 .03
Q	.00	.00	.00	.00	.00	.01	.01	.01	.00	.00	.00	.00	
1962 P	.82	.00	.00	.00	.00	.05	.90	.03	1.91	.76	.50	.47	5.44 .00
Q	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
1963 P	.00	.15	.12	.00	.00	.19	.38	1.68	.47	.71	.28	.00	3.98 .04
Q	.00	.00	.00	.00	.00	.00	.00	.00	.03	.01	T	.00	
1964 P	.00	.82	.16	.66	.65	.00	1.98	2.12	.50	.00	.09	.38	7.36 1.10
Q	.00	.00	.00	.00	.00	.00	.32	.70	.08	.00	.00	.00	
1965 P	.28	.39	.29	.83	.66	1.10	2.10	1.71	2.36	.28	.09	1.36	11.45 .78
Q	.00	.00	.00	.00	T	T	.09	.30	.39	.00	.00	.00	

Continued on next page

1/ Table shows results of reevaluation of previously published data.

Cooperative Research Project of USDA and New Mexico Agricultural Experiment Station

REEVALUATION OF PREVIOUSLY PUBLISHED 1/ MONTHLY PRECIPITATION AND RUNOFF (inches)						ALBUQUERQUE, NEW MEXICO						WATERSHED 47.002		47.02	
						AREA - 40.1 ACRES									
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL	
1966	P	.31	.29	.00	.05	.00	1.72	.77	2.10	1.94	.00	.00	.06	7.24	
	Q	.00	.00	.00	.00	.00	.39	.01	.20	.43	.00	.00	.00	1.03	
1967	P	.00	.08	.07	.04	.00	1.36	1.94	3.50	1.63	NR	NR	NR	PARTIAL	
	Q	.00	.00	.00	.00	.00	.26	.41	1.24	.14	NR	NR	NR	PARTIAL	
STA AV ² / ₍₃₉₋₆₇₎	P	.25	.27	.34	.38	.49	.75	1.14	1.57	.99	.71	.28	.41	7.58	
	Q	.00	.00	.00	T	.01	.08	.10	.29	.14	.06	T	.00	.68	
MEAN P ⁴ / _{76 YR}		.36	.34	.39	.55	.63	.60	1.41	1.29	.89	.78	.42	.46	8.12	

REEVALUATION OF PREVIOUSLY PUBLISHED

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS ⁵/₁

YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL															
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS			
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1939	9-14	.47	9-14	.26	9-14	.27	9-14	.27	9-14	.27	9-14	.27	9-13	.29	7-28	.31		
1940	8-20	.30	8-20	.12	8-20	.12	8-20	.12	8-20	.12	8-20	.12	8-20	.12	8-20	.13		
1941	9-20	.49	9-20	.18	9-20	.18	9-20	.18	9-20	.18	9-20	.18	9-20	.18	9-20	.21		
1942	6-30	.41	6-30	.15	6-30	.15	6-30	.15	6-30	.15	6-30	.15	9-3	.16	9-3	.16		
1943	8-14	.32	9-14	.15	9-14	.15	9-14	.15	9-14	.15	9-14	.15	9-14	.15	9-14	.15		
1944	10-16	1.25	10-16	.42	10-16	.42	10-16	.42	10-16	.42	10-16	.42	10-16	.42	10-16	.42		
1945		.00		.00		.00		.00		.00		.00		.00		.00		
1946	10-4	.70	10-4	.22	10-4	.22	10-4	.22	10-4	.22	10-4	.22	10-4	.22	10-4	.22		
1947	9-4	2.42	9-4	.49	9-4	.53	9-4	.53	9-4	.53	9-4	.53	9-4	.53	9-4	.99		
1948	8-4	.93	8-4	.28	8-4	.28	8-4	.28	8-4	.28	8-4	.46	8-4	.46	8-4	.47		
1949	7-23	.27	7-23	.09	7-23	.10	7-23	.10	7-23	.10	7-23	.10	7-23	.10	7-23	.11		
1950	8-15	.38	8-15	.13	8-15	.13	8-15	.13	8-15	.13	8-15	.13	8-15	.13	8-15	.13		
1951	8-21	.69	6-4	.21	6-4	.22	6-4	.22	6-4	.22	6-4	.22	6-4	.22	8-21	.37		
1952	7-7	.55	7-7	.18	7-7	.18	7-7	.18	7-7	.18	7-7	.18	7-7	.18	7-7	.18		
1953	8-15	1.99	8-15	.39	8-15	.39	8-15	.39	8-15	.39	8-15	.39	8-15	.39	8-12	.40		
1954	7-21	1.12	7-21	.42	7-21	.43	7-21	.43	7-21	.43	7-21	.43	7-21	.46	7-17	.78		
1955	8-19	.83	8-19	.30	8-19	.31	8-19	.31	8-19	.31	8-19	.31	8-19	.31	8-15	.57		
1956	8-19	1.99E	8-19	.45E	8-19	.45E	8-19	.45E	8-19	.45E	8-19	.45E	8-19	.45E	8-19	.45E		
1957	8-24	2.93	8-24	.75	8-24	.77	8-24	.77	8-24	.77	8-24	.77	8-24	.77	8-24	.77		
1958	8-21	1.20	8-21	.35	8-21	.55	8-21	.57	8-21	.57	8-21	.57	8-21	.57	8-21	.57		
1959	6-19	1.12	6-19	.38	6-19	.38	6-19	.38	6-19	.38	6-19	.38	6-19	.38	6-18	.39		
1960	10-17	.02	10-17	.01	10-17	.01	10-17	.01	10-17	.01	10-17	.01	10-17	.01	10-17	.01		
1961	8-15	.03	7-9	.008	7-9	.008	7-9	.008	7-9	.008	7-9	.008	7-9	.008	7-9	.008		
1962		.00		.00		.00		.00		.00		.00		.00		.00		
1963	9-5	.11	9-5	.03	9-5	.03	9-5	.03	9-5	.03	9-5	.03	9-5	.03	9-5	.03		
1964	8-3	1.15	8-3	.40	8-3	.40	8-3	.40	8-3	.40	8-3	.40	8-3	.40	8-3	.42		
1965	9-2	.97	9-2	.33	9-2	.33	9-2	.33	9-2	.33	9-2	.33	9-2	.39	8-29	.40		
1966	6-10	1.91	6-10	.39	6-10	.39	6-10	.39	6-10	.39	6-10	.39	6-10	.39	6-10	.39		
1967	8-13	2.25	8-13	.55	8-13	.55	8-13	.55	8-13	.55	8-13	.55	8-13	.60	8-11	1.24		
MAXIMUMS FOR PERIOD OF RECORD																		
1939 to 1967	8-24	2.93	8-24	.75	8-24	.77	8-24	.77	8-24	.77	8-24	.77	8-24	1.77	8-11	1.24		

Notes: Watershed conditions: Sparsely vegetated rangeland; about 80% of the area is bare. Vegetation consists of short grasses (blue and black grama, and galleta) and shrubs (sagebrush, saltbush, and rabbit brush). Vegetation is densest along lower two thirds of principal waterway. 1/ Table shows results of reevaluation of previously data. Thiessen weighted using 2 rain gages. 2/ Precipitation and runoff records began July 1939; re-opened April 1940; station closed October 1967. 3/ Average yearly total are the sums of the average monthly totals. 4/ Mean P based on 76-yr (1892-1967) U.S. Weather Bureau record period at Albuquerque, N. Mex. 5/ Runoff measuring structure has silted approach and is being re-rated. Runoff rates and volumes may be underestimated by a significant amount.

1967 SELECTED RUNOFF EVENT			ALBUQUERQUE, NEW MEXICO WATERSHED 47.002							
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL inches	RUNOFF inches	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. inches	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. inches
Event of August 13, 1967										
7-16	.43	.0976E	8-13	RG	R-5	.00	8-13	1802	.000	.0000
7-17	.53	.1926E		1750	.00	.00		1803	.000	.0000
7-28	.08	.0000		1803	.97	.21		1804	.002	.0000
7-29	.05	.0000		1807	2.25	.36		1805	.010	.0001
				1811	5.70	.74				
8-1	.05	.0000		1823	1.50	1.04		1806	.010	.0003
8-8	.08	.0000		1830	.94	1.15		1807	.012	.0005
8-9	.10	.0000		1840	.18	1.18		1809	.020	.0010
8-11	1.28	.3940E						1810	.054	.0016
								1811	.120	.0031
								1812	.204	.0058
								1813	.324	.0102
								1814	.559	.0175
								1815	.767	.0285
								1816	1.041	.0435
								1817	1.424	.0640
								1818	1.766	.0906
								1819	1.988	.1219
								1820	2.246	.1572
								1822	1.988	.2277
								1823	1.788	.2592
								1824	1.580	.2873
								1825	1.373	.3119
								1826	1.214	.3335
								1828	1.026	.3708
								1830	.905	.4030
								1833	.737	.4440
								1836	.559	.4764
								1838	.462	.4935
								1840	.359	.5072
								1842	.277	.5177
								1844	.220	.5260
								1846	.166	.5325
								1848	.120	.5372
								1850	.083	.5406
								1852	.061	.5430
								1855	.041E	.5456E
								1900	.024E	.5483E
								1905	.014E	.5500E
								1910	.008E	.5509E
								1915	.004E	.5514E
								1921	.002E	.5517E
								1928	.001E	.5518E
								1936	.000E	.5519E
								1942	.000E	.5519E
								1948	.000E	.5519E

Watershed conditions: Sparsely vegetated rangeland; about 80% of the area is bare. Vegetation consists of short grasses (blue and black grama, and gallera) and shrubs (sagebrush, saltbush, and rabbit brush). Vegetation is densest along lower two thirds of principal waterway.

ALBUQUERQUE, NEW MEXICO WATERSHED 47.002

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 40.43. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, MISC. PUB. NO. 945, P. 47.2-4.

REEVALUATION OF PREVIOUSLY PUBLISHED MONTHLY PRECIPITATION AND RUNOFF (inches) 1/						ALBUQUERQUE, NEW MEXICO WATERSHED 47.003 AREA - 176 ACRES								47.03
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1939	P	NR	NR	NR	NR	NR	NR	.90	1.59	1.47	.92	NR	NR	PARTIAL
	Q	NR	NR	NR	NR	NR	NR	.00	.00	.00	T	NR	NR	PARTIAL
1940	P					.90	1.27	1.35	1.89	1.94	.36	1.76	1.37	PARTIAL
	Q					.00	.00	.00	.00	.00	.00	.00	.00	PARTIAL
1941	P	.91	.30	1.62	1.47	2.80	.70	1.11	2.00	3.26	1.69	.24	.41	16.51
	Q	.00	.00	.00	.00	.00	.00	.00	.00	.01	.02	.00	.00	.03
1942	P	.00	.22	.00	1.16	.00	1.10	.28	1.92	1.46	.50	.00	.73	7.37
	Q	.00	.00	.00	.00	.00	.00	.00	.00	T	.00	.00	.00	
1943	P	.23	.35	.18	.13	.83	2.05	.50	2.38	.81	.24	.25	1.21	9.16
	Q	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
1944	P	.20	.18	.50	.11	.59	.19	3.46	1.33	.53	1.46	.68	.82	10.05
	Q	.00	.00	.00	.00	.00	.00	.01	T	.00	.07	.00	.00	.08
1945	P	.57	.27	.41	.32	.00	.02	.84	1.17	.44	.46	.00	.18	4.68
	Q	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
1946	P	.32	.02	.71	.17	.31	.16	1.06	2.45	.54	.93	1.00	.00	7.67
	Q	.00	.00	.00	.00	.00	.00	.00	T	.00	.03	.00	.00	.03
1947	P	.29	.14	.09	.08	.63	.14	.24	1.47	3.04	.16	.20	.65	7.13
	Q	.00	.00	.00	.00	.00	.00	.00	.00	.86	.00	.00	.00	.86
1948	P	.31	1.31	.04	.20	.86	1.03	.38	2.06	.78	1.54	.08	.25	8.84
	Q	.00	.00	.00	.00	T	T	.00	.14	.00	.01	.00	.00	.15
1949	P	.53	.23	.27	.54	1.63	1.03	2.86	.68	1.25	.29	.00	.14	9.45
	Q	.00	.00	.00	.00	.01	T	.07	T	.01	.00	.00	.00	.09
1950	P	.00	.24	.00	.47	.09	.27	1.74	.81	.93	.00	.00	.05	4.60
	Q	.00	.00	.00	.00	.00	.00	.15	.06	.00	.00	.00	.00	.21
1951	P	.45	.28	.09	.31	.25	.85	.29	1.40	.21	.13	.11	.21	4.58
	Q	.00	.00	.00	.00	.00	.13	.38	.00	.00	.00	.00	.00	.51
1952	P	.36	.03	.49	.57	.24	1.66	1.35	.68	.13	.00	.46	.13	6.10
	Q	.00	.00	.00	.00	.00	.13	.16	.05	.00	.00	.00	.00	.34
1953	P	.00	.54	1.02	.28	.22	.71	.61	1.07	.01	.20	.39	.05	5.10
	Q	.00	.00	.00	.00	.00	.00	.00	.47	.00	.00	.00	.00	.47
1954	P	.07	.03	.27	.00	.59	1.67	1.96	1.36	1.15	.42	.04	.20	7.76
	Q	.00	.00	.00	.00	.04	.37	.31	.49	.11	.00	.00	.00	1.32
1955	P	.10	.10	.00	.12	.63	.22	.99	1.35	.42	.04	.00	.08	4.05
	Q	.00	.00	.00	.00	.00	.00	.08	.42	.15	.00	.00	.00	.65
1956	P	.22	.21	.00	.00	.00	.20	.96	.98	.00	.29	.00	.00	2.86
	Q	.00	.00	.00	.00	.00	.00	.00	.20	.00	.00	.00	.00	.20
1957	P	.18	.68	.99	.20	.60	.45	1.27	2.62	.00	1.87	.68	.07	9.61
	Q	.00	.00	.00	.00	.02	.03	.08	.59	.00	.42	.00	.00	1.14
1958	P	.36	.10	.91	.91	.00	.44	.07	2.30	1.20	1.28	.06	.30	7.93
	Q	.00	.00	.00	.00	.00	.00	.00	.15	.00	.00	.00	.00	.15
1959	P	.00	.10	.12	.91	.75	1.11	1.14	1.99	.00	1.35	.00	.68	8.15
	Q	.00	.00	.00	.00	.11	.00	.05	.10	.00	T	.00	.00	.26
1960	P	.26	.18	.11	.00	.55	.53	.77	.32	.21	2.97	.00	.69	6.59
	Q	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
1961	P	.00	.11	.73	.56	.00	.67	1.14	.58	.29	1.02	.62	.43	6.15
	Q	.00	.00	.00	.00	.00	.00	T	.01	.00	.00	.00	.00	.01
1962	P	.76	.00	.00	.00	.00	.05	.85	.00	1.98	.77	.50	.47	5.38
	Q	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
1963	P	.00	.19	.13	.00	.00	.17	.34	1.63	.41	.00	.34	.00	3.91
	Q	.00	.00	.00	.00	.00	.00	.00	.00	.00	T	.00	.00	T
1964	P	.00	.81	.19	.68	.64	.00	1.89	2.02	.47	.00	.09	.41	7.20
	Q	.00	.00	.00	.00	T	.00	.17	.26	.02	.00	.00	.00	.45
1965	P	.28	.37	.28	.79	.66	1.11	2.12	1.71	2.31	.27	.07	1.35	11.32
	Q	.00	.00	.00	.00	T	.00	.06	.06	.23	.00	.00	.00	.35

Continued on next page

1/ Table shows results of reevaluation of previously published data.

Continued on next page

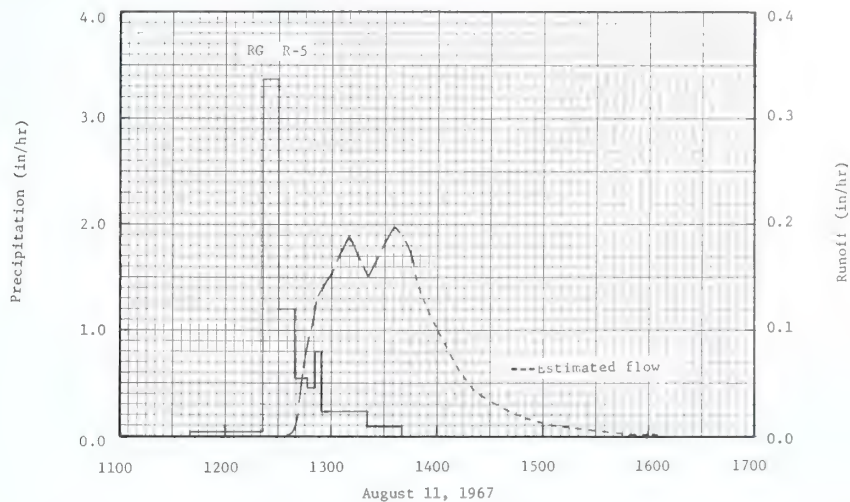
^{1/} Table shows results of reevaluation of previously published data.

REEVALUATION OF PREVIOUSLY PUBLISHED MONTHLY PRECIPITATION AND RUNOFF (inches) 1/						ALBUQUERQUE, NEW MEXICO WATERSHED 47.003 AREA - 176 ACRES							47.03			
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1966	P	.29	.28	.00	.05	.00	1.75	.73	2.14	2.02	.00	.00	.05	7.31		
	Q	.00	.00	.00	.00	.00	.33	T	.07	.21	.00	.00	.00	.61		
1967	P	.00	.09	.07	.04	.00	1.34	2.05	3.49	1.61	NR	NR	NR	PARTIAL		
	Q	.00	.00	.00	.00	.00	.03	.33	.45	.06	NR	NR	NR	PARTIAL		
STA AV ^{2/} P (39-67) Q	P	.25	.27	.34	.37	.49	.75	1.15	1.48	1.00	.71	.28	.40	3/7.49		
	Q	.00	.00	.00	.00	.01	.04	.06	.12	.06	.02	.00	.00	.31		
MEAN P 4/ 76 YR		.36	.34	.39	.55	.63	.60	1.41	1.29	.89	.78	.42	.46	8.12		
REEVALUATION OF PREVIOUSLY PUBLISHED																
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS ^{5/}																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1939	10-7	.001	10-7	.001	10-7	.001	10-7	.003	10-7	.003	10-7	.003	10-7	.003	10-7	.003
1940	6-28	T	6-28	T	6-28	T	6-28	T	6-28	T	6-28	T	6-28	T	6-28	T
1941	9-20	.02	10-3	.01	10-3	.02	10-3	.02	10-3	.02	10-3	.02	10-3	.02	10-3	.02
1942	9-4	.004	9-4	.001	9-4	.001	9-4	.001	9-4	.001	9-4	.001	9-4	.001	9-4	.001
1943	9-14	T	9-14	T	9-14	T	9-14	T	9-14	T	9-14	T	9-14	T	9-14	T
1944	10-16	.12	10-16	.06	10-16	.07	10-16	.07	10-16	.07	10-16	.07	10-16	.07	10-16	.07
1945		.00		.00		.00		.00		.00		.00		.00		.00
1946	10-4	.05	10-4	.03	10-4	.03	10-4	.03	10-4	.03	10-4	.03	10-4	.03	10-4	.03
1947	9-4	.89	9-4	.42	9-4	.50	9-4	.51	9-4	.51	9-4	.51	9-4	.51	9-4	.51
1948	8-4	.17	8-4	.09	8-4	.11	8-4	.14	8-4	.14	8-4	.14	8-4	.14	8-4	.14
1949	7-23	.07	7-23	.04	7-23	.05	7-23	.05	7-23	.05	7-23	.05	7-23	.05	7-23	.05
1950	7-15	.22	7-15	.13	7-15	.15	7-15	.15	7-15	.15	7-15	.15	7-15	.15	7-15	.15
1951	8-21	.35	8-21	.21	8-21	.23	8-21	.24	8-21	.24	8-21	.24	8-21	.24	8-21	.24
1952	7-7	.17	7-7	.13	7-7	.16	7-7	.16	7-7	.16	7-7	.16	7-7	.16	7-7	.16
1953	8-15	1.05E	8-15	.44E	8-15	.47E	8-15	.47E	8-15	.47E	8-15	.47E	8-15	.47E	8-15	.47E
1954	7-23	.41	7-23	.23	7-23	.27	7-23	.27	7-23	.27	7-22	.31	7-22	.31	7-22	.31
1955	8-15	.41	8-15	.19	8-15	.22	8-15	.22	8-15	.22	8-15	.22	8-15	.22	8-15	.22
1956	8-19	.46	8-19	.19	8-19	.20	8-19	.20	8-19	.20	8-19	.20	8-19	.20	8-19	.20
1957	8-24	.55	8-24	.28	8-24	.33	8-24	.34	8-24	.34	9-24	.34	8-24	.34	8-24	.34
1958	8-21	.13	8-21	.08	8-21	.12	8-21	.15	8-21	.15	8-21	.15	8-21	.15	8-21	.15
1959	5-23	.15	5-23	.08	5-23	.11	5-23	.11	5-23	.11	5-23	.11	5-23	.11	5-23	.11
1960		.00		.00		.00		.00		.00		.00		.00		.00
1961	8-15	.01	8-15	.01	8-15	.01	8-15	.01	8-15	.01	8-15	.01	8-15	.01	8-15	.01
1962		.00		.00		.00		.00		.00		.00		.00		.00
1963	10-19	T	10-19	T	10-19	T	10-19	T	10-19	T	10-19	T	10-19	T	10-19	T
1964	8-3	.24	8-3	.15	8-3	.17	8-3	.18	8-3	.18	8-3	.19	8-3	.19	8-3	.19
1965	9-2	.17	9-2	.14	9-2	.19	9-2	.20	9-2	.20	9-2	.20	9-2	.23	9-2	.23
1966	6-10	.44	6-10	.28	6-10	.33	6-10	.33	6-10	.33	6-10	.33	6-10	.33	6-10	.33
1967	8-11	.20	8-11	.17	8-11	.23	8-11	.24	8-11	.24	8-11	.24	7-16	.26	8-11	.44
MAXIMUMS FOR PERIOD OF RECORD 1/																
1939 TO	8-15		8-15		9-4		9-4		9-4		9-4		9-4		9-4	
1967	1953	1.05E	1953	.44E	1947	.50	1947	.51	1947	.51	1947	.51	1947	.51	1947	.77
Notes: Watershed conditions: Sparsely vegetated rangeland; about 75% of the area is bare. Vegetation consists of short grasses (blue and black grama and galleta), and shrubs (sagebrush, and snakeweed). Vegetation is comparatively heavy in a narrow strip along the principal waterway. 1/ Table shows results or reevaluation of previously published data. Thiessen weighted using 2 rain gages. 2/ Precipitation and runoff records began July 1939; station closed November 1939; re-opened April 1940; station closed October 1967. 3/ Average yearly total are the sums of the average monthly totals. 4/ Mean P based on 76-yr (1892-1967) U.S. Weather Bureau record period at Albuquerque, N. Mex. 5/ Runoff measuring structure has silted approach and is being re-rated. Runoff rates and volumes may be underestimated by a significant amount.																

1967 SELECTED RUNOFF EVENT			ALBUQUERQUE, NEW MEXICO WATERSHED 47.003							
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)
Event of August 11, 1967										
	RG R-5		8-11	RG	R-5		8-11			
7-12	.27	.0000		1140	.00	.00		1236	.000	.0000
7-16	.43	.0697E		1222	.04	.03		1237	.000	.0000
7-17	.53	.1934E		1230	3.37	.48		1239	.006E	.0001E
7-28	.08	.0000		1239	1.20	.66		1242	.028	.0010
7-29	.05	.0000		1247	.53	.73		1243	.048	.0016
8-1	.05	.0000		1251	.45	.76		1244	.065	.0025
8-8	.08	.0000		1254	.80	.80		1245	.077	.0037
8-9	.10	.0000		1321	.22	.90		1248	.094	.0080
				1340	.09	.93		1250	.111	.0114
								1252	.128	.0154
								1300	.154	.0342
								1306	.178	.0508
								1310	.189	.0630
								1312	.183	.0692
								1315	.170	.0780
								1321	.152	.0941
								1325	.164	.1046
								1330	.183	.1191
								1335	.198	.1350
								1340	.189	.1511
								1348	.152E	.1738E
								1357	.113E	.1937E
								1405	.085	.2069
								1410	.069	.2133
								1415	.055	.2185
								1420	.045	.2227
								1430	.033	.2292
								1440	.024	.2339
								1450	.017	.2374
								1500	.011	.2397
								1515	.007	.2420
								1530	.003	.2432
								1545	.001E	.2437E
								1605	.000E	.2440E
								1630	.000E	.2440E
								1647	.000E	.2440E

Watershed conditions: Sparsely vegetated rangeland; about 75% of area is bare. Vegetation consists of short grasses (blue and black grama and galleta) and shrubs (sagebrush, saltbush, and snakeweed). Vegetation is comparatively heavy in a narrow strip along the principal waterway.

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 177.47. FOR TOPOGRAPHIC MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 47.3-4.



ALBUQUERQUE, NEW MEXICO WATERSHED 47.003

MONTHLY PRECIPITATION AND RUNOFF (inches)							OXFORD, MISSISSIPPI							WATERSHED W-4A ^{1/}		62.01									
							AREA—1,580 ACRES (2.47 SQ. MILES) ^{2/}																		
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL											
1967	P ^{3/}	1.59	2.90	3.99	3.98	7.55	2.17	6.46	6.00	1.22	2.13	1.87	8.37	48.23											
	Q	.03	.03	.50	.05	.87	.00	1.06	1.06	.00	.00	.00	.94	4.54											
STA AV ^{4/}	P	3.53	4.99	4.79	4.50	3.89	2.95	4.25	3.46	4.65	2.11	4.04	5.09	48.25											
(57-67)	Q	.57	.97	.87	.55	.28	.10	.24	.21	.32	.05	.37	.65	5.18											
MEAN	P ^{5/}																								
48 YR		5.67	5.27	5.93	5.06	4.66	3.76	4.40	3.27	3.45	2.88	4.51	5.13	53.99											
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																									
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL																						
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS										
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME									
1967	7-9	.61	7-9	.53	7-9	.79	7-9	.96	7-9	.97	7-9	.97	7-8	.97	7-2	1.06									
MAXIMUMS FOR PERIOD OF RECORD																									
19 57 TO	2-23	.84	2-23	.72	2-23	1.13	3-4	1.56	3-4	1.62	1-31	2.38	1-30	3.34	1-27	3.90									
19 67	1962		1962		1962		1964		1964		1957		1957		1957										
NOTES: Watershed conditions: About 13% in cultivation (cotton and corn), fair cover November to March, poor cover April and May improving to good by mid-July; 39% in pasture and idle land, good cover April to October with fair cover remainder of year; 47% in woods, good cover; 1% bare gullies. Percentages of total area in various land use categories are based on the latest survey completed in 1968. 1/ Reported as Watershed W-4 prior to 1965. About 29% of drainage area above small desilting and retention dams. 2/ Gaging station relocated upstream Jan. 1, 1965. Drainage area reduced from 2000 to 1580 acres. 3/ Monthly precipitation Thiessen weighted from rain gages 7, 8 and 18. 4/ Precipitation and runoff records began Jan. 1957. 5/ Mean P based on 48-yr (1920-67) U.S. Weather Bureau record period at Holly Springs 2N, Miss.																									
1967 DAILY AIR TEMPERATURE (degrees F)							OXFORD, MISSISSIPPI							WATERSHED W-4A		62.01									
DAY	JAN		FEB		MAR		APR		MAY		JUNE		JULY		AUG		SEPT		OCT		NOV		DEC		
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	
1	44	28	69	58	57	26	79	54	73	63	78	63	87	69	85	74	74	52	81	49	63	45	59	31	
2	49	24	62	34	68	40	80	55	64	46	68	56	80	67	75	68	76	49	82	49	57	44	61	40	
3	40	22	44	26	58	48	80	50	68	46	75	54	82	62	87	68	70	60	84	52	48	30	47	25	
4	45	19	54	28	74	55	81	46	70	56	78	51	84	62	82	68	68	60	84	50	46	25	59	21	
5	52	30	64	38	72	44	83	61	67	52	81	60	76	66	84	64	80	69	86	53	45	22	59	31	
6	58	36	50	23	47	30	80	64	72	62	83	63	71	62	86	60	80	61	85	55	50	21	58	52	
7	59	33	31	17	48	22	77	59	66	56	84	65	82	60	88	64	77	65	83	52	54	22	66	40	
8	37	25	39	15	56	26	82	55	73	60	86	65	86	64	90	76	82	66	65	43	58	24	66	36	
9	40	23	48	16	70	35	82	63	75	44	85	67	82	69	88	75	80	62	64	43	66	26	64	52	
10	41	26	55	28	72	52	71	59	70	50	86	64	88	72	80	83	73	64	61	37	70	44	59	54	
11	40	20	50	36	78	64	70	53	86	70	88	66	88	71	74	58	82	60	62	31	62	49	59	39	
12	53	20	50	26	79	66	81	52	81	67	88	67	82	71	78	53	72	66	73	36	73	44	61	38	
13	44	35	62	26	81	63	81	63	86	68	91	64	84	63	80	49	79	64	81	47	74	38	70	47	
14	56	32	64	36	79	62	74	63	82	66	91	64	72	54	83	52	80	62	83	58	57	31	58	40	
15	41	20	67	41	73	47	82	64	65	48	88	68	80	52	85	58	79	61	84	57	60	29	38	33	
16	45	20	39	29	60	32	83	64	72	42	88	63	79	55	84	64	84	63	64	54	61	26	48	29	
17	36	22	34	29	46	29	80	47	78	54	92	64	94	64	80	66	86	60	54	50	68	43	58	42	
18	29	16	37	26	47	24	67	43	81	49	94	66	86	60	86	66	88	59	62	36	59	26	66	38	
19	43	19	59	26	48	35	71	47	82	64	89	67	86	65	82	68	87	62	64	32	61	23	71	35	
20	51	16	46	31	58	46	79	53	76	58	86	69	83	64	83	64	86	63	74	36	64	34	68	50	
21	67	41	44	26	60	38	79	64	60	56	89	70	84	65	85	62	86	62	74	40	58	48	72	43	
22	70	53	50	31	66	33	78	52	72	53	84	71	85	71	84	64	78	51	78	43	60	39	42	26	
23	70	62	50	21	75	37	76	44	73	46	90	70	88	68	85	62	76	45	76	40	50	34	37	21	
24	72	56	33	11	80	44	60	46	80	45	89	70	89	70	84	66	80	48	76	50	65	35	54	26	
25	68	58	30	11	74	53	60	45	85	58	84	68	88	72	82	67	82	42	63	36	64	32	51	22	
26	65	32	42	19	67	57	75	52	86	58	80	66	86	71	76	70	83	50	69	37	69	35	36	24	
27	40	28	51	30	70	58	62	41	86	59	85	62	89	71	79	65	66	50	60	34	46	21	32	23	
28	47	23	48	29	79	56	70	38	86	62	85	70	88	70	68	60	54	39	68	30	42	19	33	22	
29	58	27	---	---	82	53	72	44	84	64	88	70	84	67	83	52	62	33	72	50	56	34	38	22	
30	67	37	---	---	78	61	79	62	81	67	89	70	90	64	86	55	73	37	64	54	59	41	37	23	
31	67	52	---	---	79	60	---	---	76	65	---	---	89	70	68	58	---	---	62	49	---	---	---	37	23
AV.	51	31	49	27	67	45	76	53	76	57	85	65	84	66	82	64	77	56	72	45	59	33	54	34	
MEAN	41.1		38.2		56.1		64.6		66.3		75.3		74.9		72.9		66.8		58.4		45.8		43.7		
STA AV	48.28		53.32		60.38		72.50		81.58		86.64		89.68		89.67		83.61		74.48		63.38		51.30		
NOTES: TEMPERATURE DATA FROM U. S. WEATHER BUREAU STATION AT HOLLY SPRINGS 2N, MISS. STATION AVERAGE IS FOR 11-YR (1957-67) RECORD PERIOD.																									

Cooperative Research Project of USDA, University of Mississippi, and Mississippi State Agricultural Experiment Station

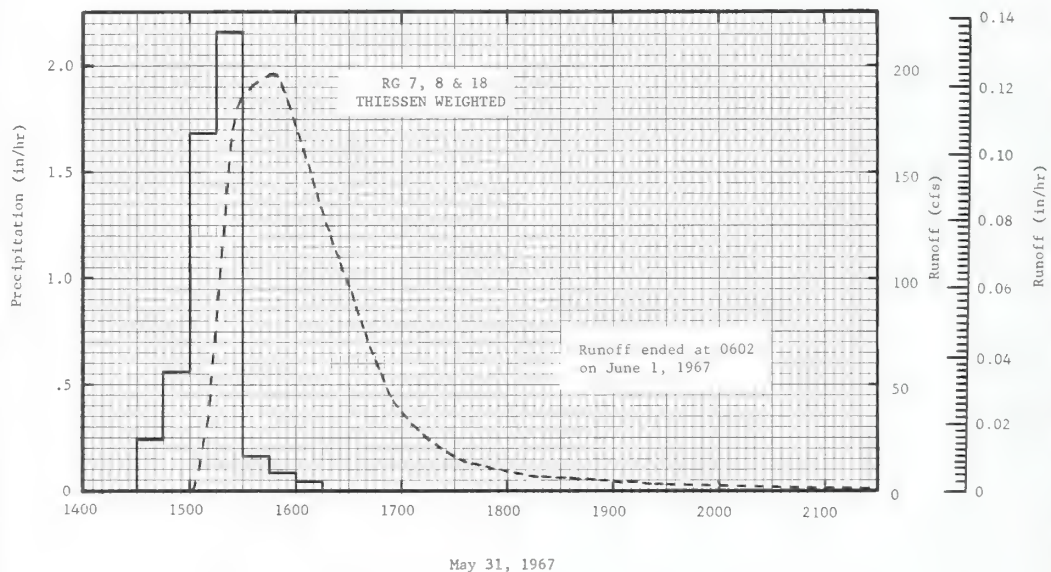
1967 DAILY PRECIPITATION (inches)						OXFORD, MISSISSIPPI				WATERSHED W-4A				62.01
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC		
1	.00	.00	.00	.00	1.52	.00	.11	.20	.00	.00	.21	.00		
2	.00	.25	.00	.00	.06	.00	.59	2.63	.00	.00	.00	1.45		
3	.00	.00	.00	.00	.00	.00	.00	1.04	.00	.00	.16	.00		
4	.00	.00	.00	.00	.00	.00	.00	.44	.00	.00	.00	.00		
5	.00	.00	.35	.00	.00	.00	1.41	.00	.00	.00	.00	.00		
6	.00	.00	2.14	.00	2.54	.00	.00	.00	.00	.00	.00	.19		
7	.05	.00	.00	.00	.00	.00	.00	.11	.24	.00	.00	.00		
8	.00	.00	.00	.00	.00	.00	.00	.00	.29	.03	.00	.00		
9	.00	.00	.00	.00	.00	.08	2.82	.01	.00	.00	.00	1.92		
10	.00	.00	.00	.07	.00	.00	.00	.00	.00	.00	.00	.16		
11	.00	.00	.00	.00	.00	.00	.04	.00	.01	.00	.35	.42		
12	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00		
13	.56	.00	.00	.53	.00	.00	.21	.00	.00	.00	.00	.00		
14	.07	.00	.00	.80	.25	.00	.00	.00	.00	.00	.00	.45		
15	.00	.01	.00	.00	.17	.00	.00	.00	.00	.00	.00	.20		
16	.00	.16	.00	.00	.00	.00	.00	.00	.00	1.62	.00	.00		
17	.00	.31	.00	.00	.00	.00	.00	.10	.00	.10	.00	.87		
18	.00	.00	.00	.00	.00	.23	.00	.31	.00	.00	.00	.00		
19	.00	.36	.05	.00	.00	.00	.00	.00	.00	.00	.00	.00		
20	.00	.76	.23	.00	.43	.02	.04	.00	.00	.00	.04	1.30		
21	.00	.00	.00	.00	.99	.52	.01	.00	.47	.00	.19	.81		
22	.00	.00	.00	.09	.00	.30	.28	.00	.00	.00	.09	.00		
23	.00	.00	.00	1.01	.00	.17	.00	.00	.00	.00	.03	.00		
24	.00	.00	.00	.00	.00	.00	.00	.01	.00	.07	.00	.00		
25	.00	.00	.00	.72	.00	.00	.00	.00	.00	.00	.00	.00		
26	.91	.00	.97	.48	.00	.00	.44	1.11	.00	.00	.00	.00		
27	.00	1.05	.25	.00	.00	.00	.00	.04	.21	.00	.00	.085		
28	.00	.00	.00	.00	.00	.02	.31	.00	.00	.00	.00	.00		
29	.00	--	.00	.00	.00	.01	.19	.00	.00	.00	.58	.00		
30	.00	--	.00	.28	.23	.82	.00	.00	.00	.23	.22	.11		
31	.00	-----	.00	-----	1.36	--	.00	.00	--	.08		.41		
TOTAL	1.59	2.90	3.94	3.98	7.55	2.17	6.46	6.00	1.22	2.13	1.87	8.37		
STA AV	3.53	4.99	4.79	4.50	3.89	2.95	4.25	3.46	4.65	2.11	4.04	5.09		
NOTES	DAILY PRECIPITATION VALUES THIESSEN WEIGHTED FROM RAIN GAGES 7, 8, AND 18.													

1967 MEAN DAILY DISCHARGE (cfs)						OXFORD, MISSISSIPPI				WATERSHED W-4A				62.01
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC		
1	.00	.00	.00	.00	5.79	.00	.00	.00	.00	.00	.00	.00		
2	.00	.00	.00	.00	.29	.00	.46	23.29	.00	.00	.00	.00		
3	.00	.00	.00	.00	.00	.00	.00	.14	.00	.00	.00	.00		
4	.00	.00	.00	.00	.00	.00	.00	39.57	.00	.00	.00	.00		
5	.00	.00	.00	.00	.00	.00	5.19	.00	.00	.00	.00	.00		
6	.00	.00	29.52	.00	29.76	.00	.04	.00	.00	.00	.00	.00		
7	.00	.00	1.70	.00	9.78	.00	.00	.00	.00	.00	.00	.00		
8	.00	.00	.68	.00	.48	.00	.00	.00	.00	.00	.00	.00		
9	.00	.00	.48	.00	.21	.00	64.25	.00	.00	.00	.00	1.00		
10	.00	.00	.15	.00	.13	.00	.17	.00	.00	.00	.00	.00		
11	.00	.00	.00	.00	.07	.00	.00	.00	.00	.00	.00	.41		
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		
14	.00	.00	.00	.60	.00	.00	.00	.00	.00	.00	.00	.00		
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.15	.00	.00		
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		
20	.00	.64	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.00		
21	.00	.00	.00	.00	.24	.00	.00	.00	.06	.00	.00	1.00		
22	.00	.00	.00	.00	.61	.00	.00	.00	.00	.00	.00	1.37		
23	.00	.00	.00	.89	.00	.00	.00	.00	.00	.00	.00	.79		
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		
25	.00	.00	.00	.23	.00	.00	.00	.00	.00	.00	.00	.00		
26	1.75	.00	.12	1.88	.00	.00	.00	7.35	.00	.00	.00	.00		
27	.01	1.31	.55	.00	.00	.00	.00	.00	.00	.00	.00	.00		
28	.00	.24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		
29	.00	--	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		
30	.00	--	.00	.00	.00	.12	.00	.00	.00	.00	.00	.00		
31	.00	.00	.00	--	11.31	--	.00	.00	--	.00	--	.46		
MEAN	.06	.08	1.07	.12	1.87	.61	2.27	2.26	.00	.11	.00	.00		
INCHES	.03	.03	.50	.05	.87	.00	1.06	1.06	.00	.00	.00	.00		
NOTES	TO CONVERT DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY 0.01506. QUALITY OF RECORDS: GOOD, ESTIMATED TO BE WITHIN 10% OF ACTUAL.													

1967 SELECTED RUNOFF EVENT			OXFORD, MISSISSIPPI				WATERSHED W-4A			
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)
Event of May 31 - June 1, 1967 ^{1/}										
5-31	2/ .11	.000	5-31	3 RG	4V ₃		5-31	1502	.00	.0000
				1430	.00	.00		1510	35.81	.0015
				1445	.24	.06		1520	130.70	.1002
				1500	.56	.20		1528	144.72	.0234
				1515	1.68	.62		1548	196.70	.0633
				1530	2.15	1.16		1608	150.30	.0996
				1545	.16	1.20		1632	93.15	.1302
				1600	.08	1.22		1654	44.54	.1461
				1615	.04	1.23		1726	18.37	.1566
								1758	9.58	.1613
								1836	5.98	.1643
								1928	3.16	.1668
								2030	1.73	.1684
								2218	.68	.1698
								2400	.68	.1705
							6-1	0602	.00	.1715

Watershed conditions: 13% of area in cultivation, chiefly cotton and corn, generally poor cover; 28% in pasture and 11% idle, fair to good cover; 47% in woods, good cover; 1% in bare gullies.

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.000628. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 62.1-4. ^{1/} ISOHYETAL MAP ON P. 62.11-4. DAILY TOTALS FOR INDIVIDUAL RAIN GAGES LISTED ON PP. 62.11-2 AND 62.11-3. FOR 30-DAY ANTECEDENT P AND Q, SEE TABLES ON PREVIOUS PAGE. ^{2/} RAINFALL PRIOR TO 1430 ON 5-31-67. ^{3/} THIESSEN WEIGHTED STORM RAINFALL, RAIN GAGES 7, 8, AND 18.



OXFORD, MISSISSIPPI WATERSHED W-4A

MONTHLY PRECIPITATION AND RUNOFF (inches)						OXFORD, MISSISSIPPI WATERSHED W-5 ^{1/} AREA--1,130 ACRES (1.76 SQ. MILES)								62.02
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1967	P ₂ /	1.59	2.87	4.21	3.87	8.06	2.58	7.04	6.52	1.28	2.18	2.09	7.92	50.21
	O	.10	.24	1.28	.10	2.67	.06	2.12	1.85	.00	.00	.00	1.80	10.22
STA AV ³ /P		3.62	4.98	4.94	4.54	4.06	2.99	4.19	3.91	4.43	2.09	4.07	5.15	48.97
(57-67) Q		1.23	1.86	1.83	1.16	.70	.30	.39	.45	.43	.12	.66	1.45	10.58
MEAN	P ₄ /													
48 YR		5.67	5.27	5.93	5.06	4.66	3.76	4.40	3.27	3.45	2.88	4.51	5.13	53.99
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS														
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL											
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	7-9	1.06	7-9	.93	7-9	1.37	7-9	1.65	7-9	1.84	7-9	1.86	7-8	1.86
													7-5	2.12
MAXIMUMS FOR PERIOD OF RECORD														
19 57 TO	3-4	1.19	3-4	.99	3-4	1.63	3-4	2.12	2-9	2.80	2-9	3.10	1-30	3.72
19 67	1964		1964		1964		1964		1966		1966		1957	1957
NOTES: Watershed conditions: About 11% in cultivation (cotton and corn), fair cover November to March, poor cover April and May improving to good by mid-July; 58% in pasture and idle land, good cover April to October with fair cover remainder of year; 30% in woods, good cover; 1% bare gullies. Percentages of total area in various land use categories are based on the latest survey completed in 1967. 1/ About 21% of drainage area above small desilting and retention dams. 2/ Monthly precipitation Thiessen weighted from rain gages 8 and 33. 3/ Precipitation and runoff records began Jan. 1957. 4/ Mean P based on 48-yr (1920-67) U. S. Weather Bureau record period at Holly Springs 2N, Miss.														
1967 DAILY PRECIPITATION (inches)						OXFORD, MISSISSIPPI WATERSHED W-5								62.02
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC		
1	.00	.00	.00	.00	1.53	.00	.20	.28	.00	.00	.26	.00		
2	.00	.24	.00	.00	.06	.00	.37	2.37	.00	.00	.00	.00	1.43	
3	.00	.00	.00	.00	.00	.00	.00	1.20	.00	.00	.19	.00		
4	.00	.00	.00	.00	.00	.00	.00	.55	.00	.00	.00	.00		
5	.00	.00	.35	.00	.00	.00	1.84	.00	.00	.00	.00	.00		
6	.01	.00	2.32	.00	2.82	.00	.00	.00	.00	.00	.00	.19		
7	.04	.00	.00	.00	.00	.00	.00	.15	.23	.00	.00	.00		
8	.00	.00	.00	.00	.00	.00	.00	.00	.44	.04	.00	.00		
9	.00	.00	.00	.00	.00	.00	2.94	.00	.00	.00	.00	1.25		
10	.00	.00	.00	.07	.00	.00	.00	.00	.00	.00	.00	.16		
11	.00	.00	.00	.00	.00	.00	.10	.00	.13	.00	.35	.47		
12	.00	.00	.00	.00	.00	.00	.07	.00	.00	.00	.00	.00		
13	.52	.00	.00	.44	.00	.00	.55	.00	.00	.00	.00	.00		
14	.07	.00	.00	.74	.25	.00	.00	.00	.00	.00	.00	.39		
15	.00	.03	.00	.00	.21	.00	.00	.00	.00	.00	.00	.24		
16	.00	.11	.00	.00	.00	.00	.00	.00	.00	1.65	.00	.00		
17	.00	.30	.00	.00	.00	.00	.00	.10	.00	.11	.00	.81		
18	.00	.02	.00	.00	.00	.18	.00	.17	.00	.00	.00	.00		
19	.00	.38	.04	.00	.00	.00	.00	.00	.00	.00	.00	.00		
20	.00	.75	.21	.00	.46	.02	.00	.00	.00	.00	.02	1.53		
21	.00	.00	.00	.00	.84	.70	.00	.00	.24	.00	.25	.85		
22	.00	.00	.00	.14	.00	.31	.13	.00	.00	.00	.18	.00		
23	.00	.00	.00	.96	.00	.16	.00	.00	.00	.00	.04	.00		
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.06	.00	.00		
25	.00	.00	.00	.70	.00	.00	.00	.00	.00	.00	.00	.00		
26	.95	.00	1.01	.48	.00	.00	.22	1.63	.00	.00	.00	.00		
27	.00	1.04	.28	.00	.00	.00	.00	.07	.24	.00	.00	.055		
28	.00	.00	.00	.00	.00	.00	.38	.00	.00	.00	.00	.00		
29	.00	---	.00	.00	.00	.02	.24	.00	.00	.00	.55	.00		
30	.00	---	.00	.34	.27	1.19	.00	.00	.00	.25	.25	.11		
31	.00	---	.00	---	1.62	---	.00	.00	.07	.07	---	.44		
TOTAL	1.59	2.87	4.21	3.87	8.06	2.58	7.04	6.52	1.28	2.18	2.09	7.92		
STA AV	3.62	4.98	4.94	4.54	4.06	2.99	4.19	3.91	4.43	2.09	4.07	5.15		
NOTES: FOR DAILY AIR TEMPERATURES IN THE VICINITY, SEE TABLE FOR WATERSHED W-4A, P. 62.1-1. DAILY PRECIPITATION VALUES THIESSEN WEIGHTED FROM RAIN GAGES 8 AND 33. STATION AVERAGE IS FOR 11-YR (1957-67) RECORD PERIOD.														

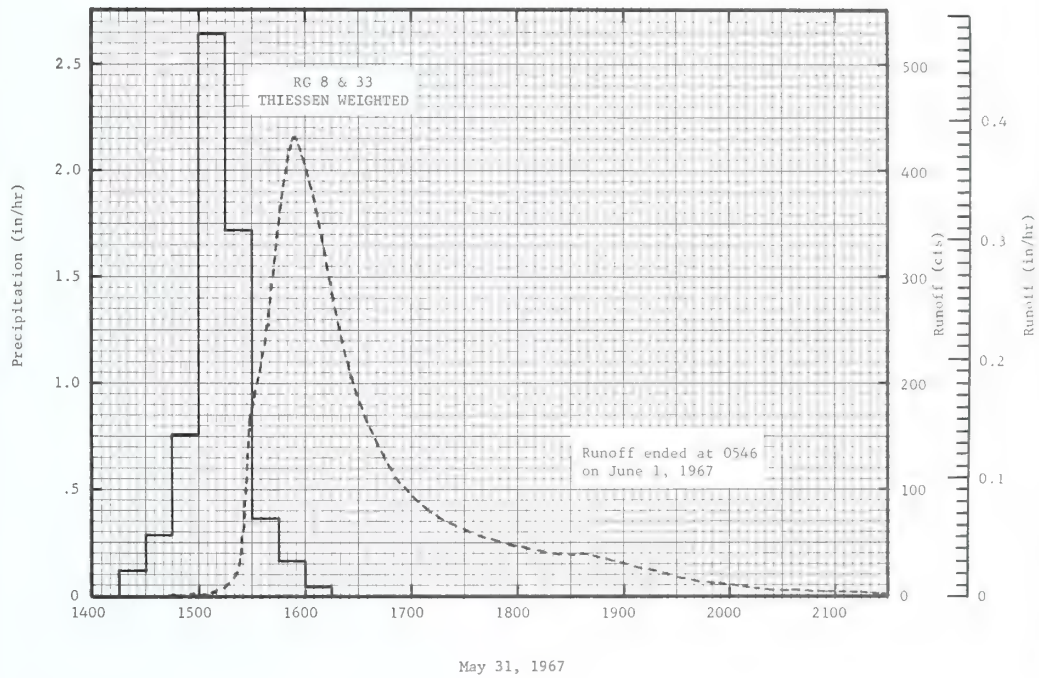
Cooperative Research Project of USDA, University of Mississippi, and Mississippi State Agricultural Experiment Station

1967 MEAN DAILY DISCHARGE (cfs)						OXFORD, MISSISSIPPI							WATERSHED #5 62.02
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	
1	.00	.00	.26	.00	17.44	.03	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.05	.00	1.38	.00	.00	19.54	.00	.00	.00	.00	8.30
3	.00	.00	.00	.00	.15	.00	.00	.23	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	62.21	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	12.15	.29	.00	.00	.00	.00	.00
6	.00	.00	56.74	.00	62.68	.00	.04	.08	.00	.00	.00	.00	.00
7	.00	.00	2.03	.00	21.50	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.98	.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.06	.00	.25	.00	88.06	.00	.06	.00	.00	10.54	.00
10	.00	.00	.00	.00	.00	.00	.25	.00	.00	.00	.00	4.89	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.72	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.27	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.41	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.06	.00	.00	.00	.00	.00	.00	.00	.20	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.06	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	7.49	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.51	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	2.69	.00	.00	.00	.00	.00	.00	.00	.00	.00	34.84	.00
21	.00	.00	.00	.00	.11	.00	.00	.00	.00	.00	.00	17.59	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.12	.00
23	.00	.00	.00	1.87	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.05	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	4.65	.00	.24	2.48	.00	.00	.00	5.39	.00	.00	.00	.00	.00
27	.11	7.99	.49	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.80	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	-----	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
30	.00	-----	.00	.00	.00	2.81	.00	.00	.00	.00	.00	.00	.00
31	.00	-----	.00	-----	22.17	-----	.00	.00	-----	.00	-----	.19	.00
MEAN	.15	.41	1.96	.16	4.08	.09	3.25	2.83	.00	.00	.00	2.76	.00
INCHES	.10	.24	1.28	.10	2.67	.06	2.12	1.85	.00	.00	.00	1.80	.00

NOTES: TO CONVERT DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY 0.02106. QUALITY OF RECORDS: GOOD, ESTIMATED TO BE WITHIN 10% OF ACTUAL.

1967 SELECTED RUNOFF EVENT						OXFORD, MISSISSIPPI							WATERSHED #5 62.02
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF						
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)			
Event of May 31 - June 1, 1967 1/													
5-31	2.00	.0000	5-31	2:06	2.64	.00	5-31	1444	.60	.0000			
				1415	.06	.00		1506	.07	.0001			
				1430	.12	.03		1522	22.66	.0027			
				1445	.23	.10		1524	160.50	.0100			
				1500	.76	.29		1536	228.68	.0335			
				1515	2.64	.95		1545	360.00	.0766			
				1530	1.72	1.38		1554	432.34	.1230			
				1545	.36	1.47		1606	365.00	.1029			
				1600	.16	1.51		1624	218.66	.0600			
				1615	.06	1.52		1648	118.68	.0329			
Watershed conditions: 11% of area in cultivation, chiefly cotton and corn, generally poor cover; 42% in pasture and 16% idle, fair to good cover; 30% in woods, good cover; 1% in bare gullies.													
								1712	77.90	.0365			
								1744	54.00	.0200			
								1816	40.61	.0165			
								1842	39.11	.0158			
								1850	18.50	.0082			
								2020	5.76	.0017			
								2130	1.50	.0004			
								2246	.00	.0000			
								2400	.00	.0000			
								2445	.00	.0000			
								2500	.00	.0000			
								2545	.00	.0000			

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.000878. FOR MAP OF WATERSHED, SEE SELECTED RUNOFF EVENTS FOR SMALL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, ARS, SMC, JANUARY 1960, P. 62.2-3. 1/ ISOHYETAL MAP ON P. 62.11-4. FOR 30-DAY ANTECEDENT P AND Q, SEE TABLES ON THIS AND PREVIOUS PAGE. 2/ RAINFALL PRIOR TO 1415 ON 5-31-67. 3/ THIESSEN WEIGHTED STORM RAINFALL, RAIN GAGES 8 AND 33. DAILY TOTALS FOR INDIVIDUAL RAIN GAGES LISTED ON PP. 62.11-2 AND 62.11-3.



OXFORD, MISSISSIPPI WATERSHED W-5

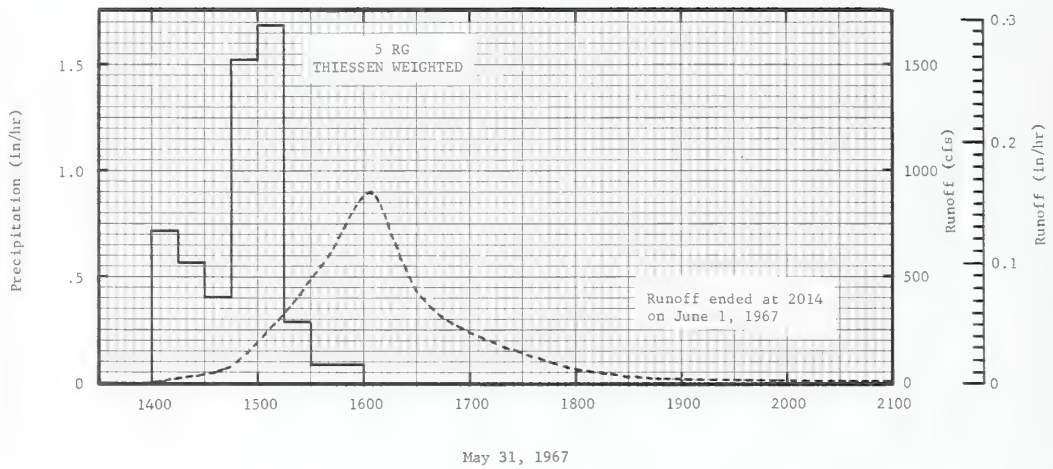
MONTHLY PRECIPITATION AND RUNOFF (inches)							OXFORD, MISSISSIPPI AREA—5,530 ACRES (8.64 SQ. MILES)							WATERSHED W-101/ 62.03				
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL				
1967	P ₂ /Q	1.65 .07	3.11 .08	5.03 1.35	4.34 .16	8.66 2.34	2.01 .01	8.63 2.44	5.78 1.63	1.38 .00	2.29 .00	2.34 .00	7.92 .76	53.14 8.84				
	STA AV3/P (57-67) Q	3.69 1.02	5.18 1.37	4.91 1.50	4.67 1.04	4.58 .75	3.06 .20	4.43 .50	3.76 .43	4.49 .48	2.11 .12	4.19 .58	5.30 1.28	50.37 9.27				
	MEAN .P ₄ / 48 YR	5.67	5.27	5.93	5.06	4.66	3.76	4.40	3.27	3.45	2.88	4.51	5.13	53.99				
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																		
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL															
			1 HOUR		2 HOURS		3 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS			
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME		
1967	7-9	1.18	7-9	1.06	7-9	1.65	7-9	1.94	7-9	2.00	7-9	2.05	7-9	2.05	7-5	2.41		
MAXIMUM OR PERIOD OF RECORD																		
1957 TO 1967	7-9 1967	1.18	7-9 1967	1.06	7-9 1967	1.65	2-23 1962	2.13	2-23 1962	2.39	12-3 1964	2.66	1-30 1957	2.98	3-24 1965	4.17		
NOTES: Watershed conditions: About 23% in cultivation (cotton, corn and soybeans), fair cover November to March, poor cover April and May improving to good by mid-July; 35% in pasture and idle land, good cover April to October with fair cover remainder of year; 40% in woods, good cover; 2% in bare gullies. Percentages of total area in various land use categories are based on the latest survey completed in 1967. 1/ About 19% of drainage area above small desilting and retention dams. 2/ Monthly precipitation Thiessen weighted from rain gages 13, 14, 20, 24 and 26. 3/ Precipitation and runoff records began Jan. 1957. Station average P is for 11-yr (1957-67) record period. Station average Q is for 10-yr (Jan. 57-Sept. 65 -- Oct. 66-Dec. 67) record period. 4/ Mean P based on 48-yr (1920-67) U. S. Weather Bureau record period at Holly Springs 2N, Miss.																		
1967 DAILY PRECIPITATION (inches)							OXFORD, MISSISSIPPI WATERSHED W-10										62.03	
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC						
1	.00	.00	.00	.00	1.30	.00	.39	.02	.00	.00	.24	.00						
2	.00	.32	.00	.00	.02	.00	.63	3.92	.00	.00	.02	1.42						
3	.00	.00	.00	.00	.00	.00	.00	.33	.00	.00	.19	.00						
4	.00	.00	.00	.00	.00	.00	.00	.36	.00	.00	.00	.00						
5	.00	.00	.63	.00	.00	.00	1.74	.00	.00	.00	.00	.00						
6	.00	.00	2.58	.00	3.42	.00	.01	.00	.00	.00	.00	.17						
7	.00	.00	.00	.00	.00	.00	.00	.04	.33	.00	.00	.00						
8	.00	.00	.00	.00	.00	.00	.00	.00	.45	.06	.00	.00						
9	.00	.00	.00	.00	.00	.00	.00	3.78	.00	.00	.00	1.37						
10	.00	.00	.00	.08	.00	.00	.00	.00	.00	.00	.00	.11						
11	.00	.00	.00	.00	.00	.00	.09	.00	.05	.00	.34	.36						
12	.00	.00	.00	.00	.00	.00	.04	.00	.00	.00	.00	.00						
13	.59	.00	.00	.55	.00	.00	.67	.00	.00	.00	.00	.00						
14	.07	.00	.00	.81	.40	.00	.00	.00	.00	.00	.00	.48						
15	.00	.02	.00	.00	.26	.00	.00	.00	.00	.00	.00	.23						
16	.00	.14	.00	.00	.00	.00	.00	.00	.00	1.56	.00	.00						
17	.00	.30	.00	.00	.00	.00	.00	.06	.00	.09	.00	.84						
18	.00	.00	.00	.00	.00	.00	.00	.42	.00	.00	.00	.00						
19	.00	.43	.02	.00	.00	.00	.00	.00	.00	.00	.00	.00						
20	.00	.73	.18	.00	.47	.02	.00	.03	.00	.00	.03	1.57						
21	.00	.00	.00	.08	.86	.56	.01	.00	.27	.00	.30	.71						
22	.00	.00	.00	.16	.00	.22	.11	.00	.00	.00	.33	.00						
23	.00	.00	.00	1.04	.00	.20	.00	.00	.00	.00	.04	.00						
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.13	.00	.00						
25	.00	.00	.00	.78	.00	.00	.00	.02	.00	.00	.00	.00						
26	.99	.00	1.33	.39	.00	.00	.08	.51	.00	.00	.00	.00						
27	.00	1.17	.29	.00	.00	.00	.00	.07	.28	.00	.00	.065						
28	.00	.00	.00	.00	.00	.02	.57	.00	.00	.00	.00	.00						
29	.00	.00	.00	.00	.00	.08	.51	.00	.00	.00	.65	.00						
30	.00	.00	.00	.45	.48	.91	.00	.00	.00	.34	.20	.13						
31	.00	.00	.00	---	1.45	---	.00	.00	---	.11	---	.47						
TOTAL	1.65	3.11	5.03	4.34	8.66	2.01	8.63	5.78	1.38	2.29	2.34	7.92						
STAY	3.69	5.18	4.91	4.67	4.58	3.06	4.43	3.76	4.49	2.11	4.19	5.30						
NOTES: FOR DAILY AIR TEMPERATURES IN THE VICINITY, SEE TABLE FOR WATERSHED W-4A, P. 62.1-1. DAILY PRECIPITATION VALUES THIESSEN WEIGHTED FROM RAIN GAGES 13, 14, 20, 24, AND 26. STATION AVERAGE IS FOR 11-YR (1957-67) RECORD PERIOD.																		

Cooperative Research Project of USDA, University of Mississippi, and Mississippi State Agricultural Experiment Station

1967 MEAN DAILY DISCHARGE (cfs)						OXFORD, MISSISSIPPI						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.00	.00	.11	.00	53.36	.17	.06	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	3.56	.00	3.94	332.05	.00	.00	.00	.00
3	.00	.00	.00	.00	2.41	.00	.00	4.45	.00	.00	.00	.00
4	.00	.00	.00	.00	.15	.00	.00	37.66	.00	.00	.00	.00
5	.00	.00	.34	.00	.00	.00	18.67	.00	.00	.00	.00	.00
6	.00	.00	304.31	.00	264.12	.00	.07	.00	.00	.00	.00	.00
7	.00	.00	5.77	.00	153.45	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	1.98	.00	10.13	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.16	.00	1.29	.00	468.52	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.16	.00	8.61	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.95	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.58	.00	.00	.00	.00	.00
13	.00	.00	.00	.01	.04	.00	63.36	.00	.00	.00	.00	.00
14	.00	.00	.00	1.47	.38	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.37	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	3.80	.00	.00	.01	.00	.00	.01	.00	.00	.00	.00
21	.00	.12	.00	.00	1.09	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.16	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	21.10	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	1.13	.00	.00	.00	.00	.00	.00	.00	.00
26	17.19	.00	.41	12.51	.00	.00	.00	4.74	.00	.00	.00	.00
27	.22	12.58	1.51	.61	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	1.90	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	.00	.00	1.72	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	.00	3.05	.00	.00	.00	.00	.00	.00
31	.00	.00	.00	.00	53.38	.00	.00	.00	.00	.00	.00	.00
MEAN	.56	.66	10.15	1.23	17.55	.11	18.27	12.23	.66	.65	.65	.76
INCHES	.07	.08	1.35	.16	2.34	.01	2.44	1.63	.08	.08	.08	.10

NOTES: TO CONVERT DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY 0.0043041. QUALITY OF RECORDS: FAIR, ESTIMATED TO BE WITHIN 15% OF ACTUAL.

1967			SELECTED RUNOFF EVENT				OXFORD, MISSISSIPPI			
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)
Event of May 31 - June 1, 1967 1/										
5-31	2/.12	.6000	5-31	5:35	1.00	.00	5-31	1400	.65	.0000
				1400	.00	.00		1402	.65	.0001
				1415	.72	.18		1420	25.72	.0001
				1430	.00	.18		1435	.65	.0001
				1445	.40	.58		1450	.65	.0133
				1500	1.52	.70		1510	.65	.0001
				1515	1.68	1.38		1532	.65	.0001
				1530	.20	1.58		1540	.65	.0001
				1545	.08	1.66		1550	.65	.0001
				1600	.08	1.74		1604	.65	.0111
								1611	.65	.0001
								1620	.65	.0001
								1630	.65	.0001
								1640	.65	.2027
								1650	.65	.0001
								1700	1.74	.0001
								1710	.65	.0001
								1720	.65	.0001
								1730	.65	.0001
								1740	.65	.0001
								1750	.65	.0001
								1804	.65	.0001
								1810	.65	.0001
								1820	.65	.0001
								1830	.65	.0001
								1840	.65	.0001
								1850	.65	.0001
								1900	.65	.0001
								1910	.65	.0001
								1920	.65	.0001
								1930	.65	.0001
								1940	.65	.0001
								1950	.65	.0001
								2000	.65	.0001
								2010	.65	.0001
								2020	.65	.0001
								2030	.65	.0001
								2040	.65	.0001
								2050	.65	.0001
								2100	.65	.0001
								2110	.65	.0001
								2120	.65	.0001
								2130	.65	.0001
								2140	.65	.0001
								2150	.65	.0001
								2200	.65	.0001
								2210	.65	.0001
								2220	.65	.0001
								2230	.65	.0001
								2240	.65	.0001
								2250	.65	.0001
								2300	.65	.0001
								2310	.65	.0001
								2320	.65	.0001
								2330	.65	.0001
								2340	.65	.0001
								2350	.65	.0001
								2400	.65	.0001
								2410	.65	.0001
								2420	.65	.0001
								2430	.65	.0001
								2440	.65	.0001
								2450	.65	.0001
								2500	.65	.0001
								2510	.65	.0001
								2520	.65	.0001
								2530	.65	.0001
								2540	.65	.0001
								2550	.65	.0001
								2600	.65	.0001
								2610	.65	.0001
								2620	.65	.0001
								2630	.65	.0001
								2640	.65	.0001
								2650	.65	.0001
								2700	.65	.0001
								2710	.65	.0001
								2720	.65	.0001
								2730	.65	.0001
								2740	.65	.0001
								2750	.65	.0001
								2800	.65	.0001
								2810	.65	.0001
								2820	.65	.0001
								2830	.65	.0001
								2840	.65	.0001
								2850	.65	.0001
								2900	.65	.0001
								2910	.65	.0001
								2920	.65	.0001
								2930	.65	.0001
								2940	.65	.0001
								2950	.65	.0001
								3000	.65	.0001
								3010	.65	.0001
								3020	.65	.0001
								3030	.65	.0001
								3040	.65	.0001
								3050	.65	.0001
								3100	.65	.0001
								3110	.65	.0001
								3120	.65	.0001
								3130	.65	.0001
								3140	.65	.0001
								3150	.65	.0001
								3200	.65	.0001
								3210	.65	.0001
								3220	.65	.0001
								3230	.65	.0001
								3240	.65	.0001
								3250	.65	.0001
								3300	.65	.0001
								3310	.65	.0001
								3320	.65	.0001
								3330	.65	.0001
								3340	.65	.0001
								3350	.65	.0001
								3400	.65	.0001
								3410	.65	.0001
								3420	.65	.0001
								3430	.65	.0001
								3440	.65	.0001
								3450	.65	.0001
								3500	.65	.0001
								3510	.65	.0001
								3520	.65	.0001
								3530	.65	.0001
								3540	.65	.0001
								3550	.65	.0001
								3600	.65	.0001
								3610	.65	.0001
								3620	.65	.0001
								3630	.65	.0001
								3640	.65	.0001
								3650	.65	.0001
								3700	.65	.0001
								3710	.65	.0001
								3720	.65	.0001
								3730	.65	.0001
								3740	.65	.0001
								3750	.65	.0001
								3800	.65	.0001
								3810	.65	.0001
								3820	.65	.0001
								3830	.65	.0001
								3840	.65	.0001
								3850	.65	.0001
								3900	.65	.0001
								3910	.65	.0001
								3920	.65	.0001
								3930	.65	.0001
								3940	.65	.0001
								3950	.65	.0001
								4000	.65	.0001
								4010	.65	.0001
								4020	.65	.0001
								4030	.65	.0001
								4040	.65	.0001
								4050	.65	.0001
								4100	.65	.0001
								4110	.65	.0001
								4120	.65	.0001
								4130	.65	.0001
								4140	.65	.0001
								4150	.65	.0001
								4200	.65	.0001
								4210	.65	.0001
								4220	.65	.0001
								4230	.65	.0001
								4240	.65	.0001
								4250	.65	.0001
								4300	.65	.0001
								4310	.65	.0001
								4320	.65	.0001
								4330	.65	.0001
								4340	.65	.0001
								4350	.65	.0001
								4400	.65	.0001
								4410	.65	.0001
								4420	.65	.0001
								4430	.65	.0001
								4440	.65	.0001
								4450	.65	.0001
								4500	.65	.0001
								4510	.65	.0001
								4520	.65	.0001
								4530	.65	.0001
								4540	.65	.0001
								4550	.65	.0001
								4600	.65	.0001
								4610	.65	.0001
								4620	.65	.0001
								4630	.65	.0001
								4640	.65	.0001
								4650	.65	.0001
								4700	.65	.0001



OXFORD, MISSISSIPPI WATERSHED W-10

MONTHLY PRECIPITATION AND RUNOFF (inches)						OXFORD, MISSISSIPPI						WATERSHED W-12 ^{1/}		62.04		
						AREA—22,800 ACRES (35.6 SQ. MILES)										
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	P ^{2/}	1.57	2.99	4.52	4.45	7.83	2.38	7.19	7.09	1.14	2.12	1.95	7.73	50.96		
	Q	.04	.13	1.00	.17	1.42	.03	1.24	1.44	.04	.03	.03	.74	6.31		
STA AV ^{3/}	P	3.57	4.97	4.81	4.50	4.16	3.10	4.28	3.74	4.28	2.07	4.07	5.05	48.60		
(57-67)	Q	.68	1.09	1.15	.62	.51	.18	.27	.25	.24	.06	.31	.73	6.09		
MEAN	P ^{4/}															
48 YR		5.67	5.27	5.93	5.06	4.66	3.76	4.40	3.27	3.45	2.88	4.51	5.13	53.49		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	7-9	.30	7-9	.29	7-9	.56	7-9	.99	7-9	1.06	7-9	1.09	8-2	1.29	8-2	1.37
MAXIMUMS FOR PERIOD OF RECORD																
19 57 TO	2-23	.35	2-23	.35	2-23	.68	2-23	1.38	2-23	1.62	2-23	1.84	1-30	2.28	3-24	4.36
19 67	1962		1962		1962		1962		1962		1962		1957		1965	
NOTES: Watershed conditions: About 18% in cultivation (cotton, corn and soybeans), fair cover November to March, poor cover April and May improving to good by mid-July; 44% in pasture and idle land, good cover April to October with fair cover remainder of year; 33% in woods, good cover; 1% in bare gullies; 4% urban. Percentages of total area in various land use categories are based on the latest survey completed in 1963. 1/ About 23% of drainage area above small desilting and retention dams. 2/ Monthly precipitation Thiessen weighted from 16 rain gages. 3/ Precipitation and runoff records began Jan. 1957. 4/ Mean P based on 48-yr (1920-67) U. S. Weather Bureau record period at Holly Springs 2N, Miss.																
1967 DAILY PRECIPITATION (inches)						OXFORD, MISSISSIPPI						WATERSHED W-12		62.04		
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC				
1	.00	.00	.00	.00	1.54	.00	.15	.23	.00	.00	.23	.00				
2	.00	.42	.00	.00	.03	.00	.68	3.53	.00	.00	.00	1.50				
3	.00	.00	.00	.00	.00	.00	.00	.65	.00	.00	.18	.00				
4	.00	.00	.00	.00	.00	.00	.00	.56	.00	.00	.00	.00				
5	.00	.00	.57	.00	.00	.00	1.35	.00	.00	.00	.00	.00				
6	.00	.00	2.51	.00	2.68	.00	.00	.00	.00	.00	.00	.14				
7	.04	.00	.00	.00	.00	.00	.00	.16	.21	.00	.00	.00				
8	.00	.00	.00	.00	.00	.00	.00	.00	.50	.06	.00	.00				
9	.00	.00	.00	.00	.00	.01	3.03	.01	.00	.00	.00	1.25				
10	.00	.00	.00	.08	.00	.00	.00	.00	.00	.00	.00	.15				
11	.00	.00	.00	.00	.00	.00	.09	.00	.05	.00	.34	.42				
12	.00	.00	.00	.00	.00	.00	.07	.00	.00	.00	.00	.00				
13	.54	.00	.00	.50	.00	.00	.44	.00	.00	.00	.00	.00				
14	.07	.00	.00	.76	.32	.00	.00	.00	.00	.00	.00	.46				
15	.00	.01	.00	.00	.22	.00	.00	.00	.00	.00	.00	.22				
16	.00	.13	.00	.00	.00	.00	.00	.00	.00	1.54	.00	.00				
17	.00	.29	.00	.00	.00	.00	.00	.08	.00	.11	.00	.80				
18	.00	.01	.00	.00	.00	.15	.00	.38	.00	.00	.00	.00				
19	.00	.36	.05	.00	.00	.00	.00	.00	.00	.00	.00	.00				
20	.00	.71	.19	.00	.35	.05	.08	.00	.00	.00	.05	1.39				
21	.00	.00	.00	.07	.87	.56	.01	.00	.11	.00	.21	.80				
22	.00	.00	.00	.10	.00	.35	.20	.00	.00	.00	.13	.00				
23	.00	.00	.00	1.35	.00	.35	.00	.00	.00	.00	.03	.00				
24	.00	.00	.00	.00	.00	.00	.00	.27	.00	.08	.00	.00				
25	.00	.00	.00	.70	.00	.00	.13	.00	.00	.00	.00	.00				
26	.92	.00	.97	.52	.00	.02	.21	1.16	.00	.00	.00	.00				
27	.00	1.06	.23	.00	.00	.00	.00	.06	.27	.00	.00	.055				
28	.00	.00	.00	.00	.00	.00	.43	.00	.00	.00	.00	.00				
29	.00	-----	.00	.00	.00	.07	.32	.00	.00	.00	.55	.00				
30	.00	-----	.00	.37	.35	.82	.00	.00	.00	.25	.23	.11				
31	.00	-----	.00	-----	1.47	-----	.00	.00	-----	.08	-----	.44				
TOTAL	1.57	2.99	4.52	4.45	7.83	2.38	7.19	7.09	1.14	2.12	1.95	7.73				
STAAV	3.57	4.97	4.81	4.50	4.16	3.10	4.28	3.74	4.28	2.07	4.07	5.05				
NOTES: FOR DAILY AIR TEMPERATURES IN THE VICINITY, SEE TABLE FOR WATERSHED W-4A, P. 62.1-1. DAILY PRECIPITATION VALUES THIENEN WEIGHTED FROM RAIN GAGES 4-9, 13, 15, 18-20, 25, 29-31, AND 33. STATION AVERAGE IS FOR 11-YR (1957-67) RECORD PERIOD.																

Cooperative Research Project of USDA, University of Mississippi, and Mississippi State Agricultural Experiment Station

1967 MEAN DAILY DISCHARGE (cfs)						OXFORD, MISSISSIPPI						WATERSHED W-12 62.04	
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	
1	.82	.31	2.68	.38	308.59	9.07	3.23	.24	2.29	1.00	1.33	1.00	
2	.82	10.75	2.28	.71	26.56	1.75	12.44	830.50	2.29	.93	1.26	82.19	
3	.82	1.68	2.11	.71	4.64	1.00	1.99	29.84	2.21	.82	1.06	2.29	
4	.82	1.00	2.02	.71	3.45	.87	.39	444.49	1.78	.76	1.00	1.14	
5	.76	1.00	2.51	.71	3.09	.82	64.60	3.85	1.48	.76	1.00	1.00	
6	.71	.88	847.90	.65	599.20	.61	6.82	1.35	1.26	.82	1.00	1.00	
7	.71	.82	35.06	.60	246.39	.51	3.83	.88	1.26	.62	1.00	.87	
8	.60	.93	12.53	.51	10.72	.43	3.09	.71	1.71	.88	1.00	.87	
9	.60	1.00	7.36	.56	1.35	.28	1028.43	.60	1.12	.93	1.00	31.48	
10	.65	1.00	4.80	.82	.93	.22	19.92	.51	1.00	.93	.93	27.49	
11	.56	.82	3.56	.82	.82	.18	3.68	.42	.87	.93	.87	4.16	
12	.47	.52	2.98	.65	.61	.23	4.19	.42	.87	.93	.93	1.91	
13	.56	.38	2.66	.69	.39	.31	24.38	.47	.93	1.13	1.00	1.07	
14	.65	.35	2.29	2.04	.49	.28	1.84	.42	.93	1.26	1.00	1.45	
15	.65	.25	1.71	.56	1.37	.28	.56	.35	.87	1.26	1.06	2.20	
16	.60	.20	1.26	.51	.27	.25	.00	.31	.87	1.40	1.00	1.96	
17	.56	.18	.89	.42	.14	.25	.38	.25	.87	1.15	.93	51.08	
18	.51	.16	.71	.42	.14	.31	.82	.96	.87	.76	1.06	25.44	
19	.51	.22	.82	.47	.13	.31	.76	.35	.87	.76	1.06	3.12	
20	.56	17.36	.76	.51	.18	.35	1.63	.35	.87	.82	1.00	277.69	
21	.56	4.43	.71	.60	1.84	.46	1.47	.32	.87	.82	1.06	159.61	
22	.56	2.98	.66	.61	1.15	.73	.76	.28	.87	.82	1.06	20.82	
23	.56	2.77	.84	80.50	.23	.82	.71	.28	.87	.93	1.00	1.04	
24	.56	2.77	1.19	3.22	.14	.35	.71	.36	.87	.93	1.00	.60	
25	.51	2.66	1.26	1.65	.13	.39	.71	1.03	.87	.87	1.00	.56	
26	18.49	2.66	1.85	50.35	.19	.33	.86	45.29	.87	1.00	.88	.60	
27	3.52	56.18	9.62	3.93	.20	.25	.61	4.69	.87	1.06	.76	.71	
28	.42	12.04	2.23	2.56	.13	.25	.59	3.04	.87	.93	.76	.66	
29	.38	-----	1.14	2.66	.15	.40	1.10	2.87	.93	1.00	.66	.43	
30	.35	-----	.87	2.26	.22	6.20	1.05	2.66	.93	1.19	1.00	.35	
31	.31	-----	.76	-----	150.65	-----	.36	2.56	-----	1.26	-----	1.39	
MEAN	1.26	4.50	30.90	5.39	44.01	.94	38.46	44.53	1.13	.96	.99	22.77	
INCHES	.04	.13	1.00	.17	1.42	.03	1.24	1.44	.04	.03	.03	.76	

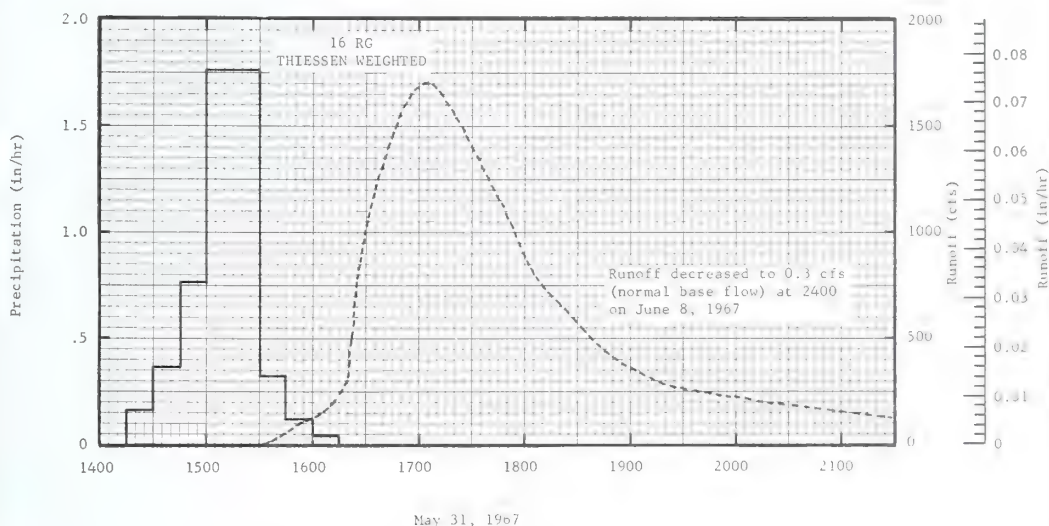
NOTES: TO CONVERT DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY 0.0010439. QUALITY OF RECORDS: GOOD, ESTIMATED TO BE WITHIN 10% OF ACTUAL.

1967 SELECTED RUNOFF EVENT						OXFORD, MISSISSIPPI						WATERSHED W-12 62.04	
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF						
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)			
Event of May 31 - June 3, 1967 1/													
5-31	2/.14	3/.0002	5-31	16 00	AVG 4/		5-31	1420	.20				
				1415	.00	.30		1430	.76	.0001			
				1430	.10	.04		1435	.87	.0001			
				1445	.36	.13		1512	2.56	.0001			
				1500	.76	.32		1530	13.99	.0002			
				1515	1.76	.76		1535	101.81	.0010			
				1530	1.76	1.20		1612	196.10	.0020			
				1545	.52	1.28		1620	321.89	.0046			
				1600	.12	1.31		1624	609.52	.0058			
				1615	.04	1.32		1632	1090.00	.0111			
								1646	1477.28	.0241			
								1704	1702.00	.0348			
								1726	1470.26	.0702			
								1740	1112.00	.0907			
								1812	735.59	.1007			
								1820	520.00	.1143			
								1830	412.19	.1222			
								1920	278.73	.1297			
								2010	209.70	.1308			
								2030	155.00	.1400			
								2206	101.81	.1513			
								2234	73.35	.1540			
								2320	59.30	.1550			
								2400	47.58	.1572			
							6-1	0130	20.81	.1597			

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.0000435. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 62.4-6. 1/ ISOHYETAL MAP ON P. 62.11-4. 2/ RAINFALL PRIOR TO 1415 ON 5-31-67. 3/ RUNOFF PRIOR TO 1420 ON 5-31-67. FOR 30-DAY ANTECEDENT P AND Q, SEE TABLES ON THIS AND PREVIOUS PAGE. 4/ THIESSEN WEIGHTED STORM RAINFALL, RAIN GAGES 4-9, 13, 15, 18-20, 25, 29-31 AND 33. DAILY TOTALS FOR INDIVIDUAL GAGES LISTED ON PP. 62.11-2 AND 62.11-3.

1907		SELECTED RUNOFF EVENT		[1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12]		[1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12]		[1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12]		
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)
<u>Event of May 31 - June 3, 1967 - Continued</u>										
							6-1	10:00	10.0	0.0
								10:30	10.0	0.0
								11:00	10.0	0.0
								11:30	10.0	0.0
								12:00	10.0	0.0
								12:30	10.0	0.0
								1:00	10.0	0.0
								1:30	10.0	0.0
								2:00	10.0	0.0
								2:30	10.0	0.0
								3:00	10.0	0.0
								3:30	10.0	0.0
								4:00	10.0	0.0
								4:30	10.0	0.0
								5:00	10.0	0.0
								5:30	10.0	0.0
								6:00	10.0	0.0
								6:30	10.0	0.0
								7:00	10.0	0.0
								7:30	10.0	0.0
								8:00	10.0	0.0
								8:30	10.0	0.0
								9:00	10.0	0.0
								9:30	10.0	0.0
								10:00	10.0	0.0
								10:30	10.0	0.0
								11:00	10.0	0.0
								11:30	10.0	0.0
								12:00	10.0	0.0
								12:30	10.0	0.0
								1:00	10.0	0.0
								1:30	10.0	0.0
								2:00	10.0	0.0
								2:30	10.0	0.0
								3:00	10.0	0.0
								3:30	10.0	0.0
								4:00	10.0	0.0
								4:30	10.0	0.0
								5:00	10.0	0.0
								5:30	10.0	0.0
								6:00	10.0	0.0
								6:30	10.0	0.0
								7:00	10.0	0.0
								7:30	10.0	0.0
								8:00	10.0	0.0
								8:30	10.0	0.0
								9:00	10.0	0.0
								9:30	10.0	0.0
	</									

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0000435. 1/ RUNOFF DECREASED TO 0.3 CFS (NORMAL BASE FLOW, AT 2400 ON JUNE 8, 1967.



OXFORD, MISSISSIPPI WATERSHED W-12

MONTHLY PRECIPITATION AND RUNOFF (inches)						OXFORD, MISSISSIPPI				WATERSHED W-17 ^{1/}				62.05			
						AREA—32,100 ACRES (50.2 SQ. MILES)											
MONTH		JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967	P ₂ / _Q	1.58 .24	3.06 .32	4.70 1.34	4.65 .44	7.87 1.89	2.33 .25	7.56 1.65	7.07 1.77	1.18 .21	2.16 .22	1.91 .22	7.87 1.20	51.94 9.75			
STA AV ₃ /P (57-67) Q		3.62 .95	5.01 1.40	4.80 1.52	4.56 .92	4.19 .83	3.14 .35	4.34 .49	3.92 .52	4.14 .42	2.08 .25	4.05 .57	5.13 1.05	48.98 9.27			
MEAN P ₄ / _{48 YR}		5.67	5.27	5.93	5.06	4.66	3.76	4.40	3.27	3.45	2.88	4.51	5.13	53.99			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																	
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL														
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS		
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	
1967	7-9	.20	7-9	.19	7-9	.39	7-9	.98	7-9	1.20	7-9	1.26	8-2	1.39	8-2	1.55	
MAXIMUMS FOR PERIOD OF RECORD																	
1957 TO 1967	2-23 1962	.21	2-23 1962	.21	2-23 1962	.41	2-23 1962	1.12	2-23 1962	1.50	12-3 1964	2.01	3-24 1965	2.39	3-24 1965	4.68	
NOTES: Watershed conditions: About 19% in cultivation (cotton, corn and soybeans), fair cover November to March, poor cover April and May improving to good by mid-July; 38% in pasture and idle land, good cover April to October with fair cover remainder of year; 38% in woods, good cover; 2% in bare gullies; 3% urban. Percentages of total area in various land use categories are based on the latest survey completed in 1965. ^{1/} About 22% of drainage area above small desilting and retention dams. ^{2/} Monthly precipitation Thiessen weighted from 21 rain gages. ^{3/} Precipitation and runoff records began Jan. 1957. ^{4/} Mean P based on 48-yr (1920-67) U. S. Weather Bureau record period at Holly Springs 2N, Miss.																	
1967 DAILY PRECIPITATION (inches)						OXFORD, MISSISSIPPI								WATERSHED W-17		62.05	
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC					
1	.00	.00	.00	.00	1.48	.00	.13	.20	.00	.00	.22	.00					
2	.00	.49	.00	.00	.02	.00	.69	3.62	.00	.00	.00	1.63					
3	.00	.00	.00	.00	.00	.00	.00	.64	.00	.00	.19	.00					
4	.00	.00	.00	.00	.00	.00	.00	.56	.00	.00	.00	.00					
5	.00	.00	.64	.00	.00	.00	1.35	.00	.00	.00	.00	.00					
6	.00	.00	2.63	.00	2.77	.00	.00	.00	.00	.00	.00	.13					
7	.03	.00	.00	.00	.00	.00	.00	.20	.20	.00	.00	.00					
8	.00	.00	.00	.00	.00	.00	.00	.00	.53	.06	.00	.00					
9	.00	.00	.00	.00	.00	.01	3.23	.02	.00	.00	.00	1.19					
10	.00	.00	.00	.08	.00	.00	.00	.00	.00	.00	.00	.14					
11	.00	.00	.00	.00	.00	.00	.08	.00	.05	.00	.33	.43					
12	.00	.00	.00	.00	.00	.00	.14	.00	.00	.00	.00	.00					
13	.54	.00	.00	.52	.00	.00	.48	.00	.00	.00	.00	.00					
14	.07	.00	.00	.76	.36	.00	.00	.00	.00	.00	.00	.50					
15	.00	.01	.00	.00	.23	.00	.00	.00	.00	.00	.00	.23					
16	.00	.12	.00	.00	.00	.00	.00	.00	.00	1.50	.00	.00					
17	.00	.28	.00	.00	.00	.00	.00	.06	.00	.11	.00	.81					
18	.00	.01	.00	.00	.00	.12	.00	.47	.00	.00	.00	.00					
19	.00	.35	.04	.00	.00	.00	.00	.00	.00	.00	.00	.00					
20	.00	.72	.17	.00	.32	.06	.07	.01	.00	.00	.06	1.46					
21	.00	.00	.00	.11	.85	.51	.01	.00	.08	.00	.19	.75					
22	.00	.00	.00	.10	.00	.35	.19	.00	.00	.00	.12	.00					
23	.00	.00	.00	1.42	.00	.29	.00	.00	.00	.00	.03	.00					
24	.00	.00	.00	.00	.00	.00	.00	.27	.00	.14	.00	.00					
25	.00	.00	.00	.69	.00	.00	.11	.00	.00	.00	.00	.00					
26	.94	.00	1.00	.56	.00	.02	.20	.94	.00	.00	.00	.00					
27	.00	1.08	.22	.00	.00	.00	.00	.08	.32	.00	.00	.055					
28	.00	.00	.00	.00	.00	.01	.44	.00	.00	.00	.00	.00					
29	.00	.00	.00	.00	.00	.11	.44	.00	.00	.00	.53	.00					
30	.00	.00	.00	.41	.38	.85	.00	.00	.00	.26	.24	.11					
31	.00	.00	.00	.00	1.46	.00	.00	.00	.00	.09	.00	.44					
TOTAL	1.58	3.06	4.70	4.65	7.87	2.33	7.56	7.07	1.18	2.16	1.91	7.87					
STA AV	3.62	5.01	4.80	4.56	4.19	3.14	4.34	3.92	4.14	2.08	4.05	5.13					
NOTES: FOR DAILY AIR TEMPERATURES IN THE VICINITY, SEE TABLE FOR WATERSHED W-4A, P. 62.1-1. DAILY PRECIPITATION VALUES THIESSEN WEIGHTED FROM RAIN GAGES 2, 4-9, 13-15, 17-20, 22, 25, 28-31, AND 33. STATION AVERAGE IS FOR 11-YR (1957-67) RECORD PERIOD.																	

Cooperative Research Project of USDA, University of Mississippi, and Mississippi State Agricultural Experiment Station

1967 MEAN DAILY DISCHARGE (cfs)						OXFORD, MISSISSIPPI				WATER YEAR - 17			
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	
1	7.22	7.40	12.89	4.36	583.46	31.00	11.42	11.80	9.68	9.29	9.29	11.13	
2	7.22	29.82	10.25	8.72	71.27	14.09	30.67	1318.14	9.29	9.29	9.10	11.13	
3	7.41	13.78	9.76	8.54	17.28	12.91	14.26	47.72	9.10	9.29	9.29	11.13	
4	8.20	10.78	9.28	8.54	14.07	11.57	14.26	655.15	9.10	9.68	9.10	11.13	
5	8.83	9.76	9.42	8.91	12.92	10.09	78.89	20.77	9.49	9.88	8.72	8.18	
6	8.62	9.51	1375.36	9.29	961.75	9.68	16.57	14.17	9.29	9.29	8.91	8.18	
7	8.40	9.28	69.13	9.48	471.95	9.49	9.49	16.08	9.68	9.68	9.29	7.60	
8	8.61	9.05	22.32	9.10	27.80	9.29	8.28	12.03	11.25	9.29	9.48	7.32	
9	8.83	9.05	15.68	8.72	23.48	9.68	1566.94	10.70	9.48	9.29	9.29	31.72	
10	8.83	9.05	13.93	9.10	19.22	9.68	63.22	10.09	9.48	9.68	9.29	60.24	
11	8.61	9.05	12.70	9.10	17.94	9.68	19.60	8.24	9.29	9.48	11.13	11.13	
12	8.61	8.62	11.06	8.72	16.43	10.08	18.07	8.73	9.29	9.48	9.29	13.05	
13	10.08	7.99	10.00	8.72	15.59	10.08	61.53	8.73	9.10	9.48	9.48	8.55	
14	11.84	7.79	10.00	20.51	15.48	9.88	13.37	9.10	8.72	9.48	9.29	11.75	
15	10.58	8.89	10.00	11.59	23.33	9.88	12.23	9.10	8.91	9.48	10.08	17.68	
16	8.83	10.00	10.00	9.88	16.16	9.88	11.56	9.29	8.91	10.97	9.88	13.25	
17	9.06	10.51	10.25	9.48	14.82	9.88	11.56	9.88	8.72	11.16	9.68	87.56	
18	9.28	10.51	10.25	9.48	14.31	10.50	11.13	14.11	8.54	9.30	9.29	50.71	
19	9.05	10.78	10.25	9.29	14.31	11.34	10.49	14.50	8.54	8.91	10.08	16.94	
20	9.05	40.13	10.76	8.91	14.82	10.97	11.37	11.34	8.72	9.10	10.49	557.23	
21	9.05	17.06	10.76	8.91	21.90	10.70	11.16	10.91	8.72	9.10	10.70	208.44	
22	8.83	11.84	10.51	8.91	21.28	10.70	9.88	10.49	8.72	8.73	1.77	88.44	
23	8.61	11.56	10.01	173.72	15.08	10.49	9.12	10.49	8.91	8.54	10.70	18.50	
24	8.61	10.78	9.76	15.22	13.84	10.29	8.36	10.70	9.10	9.34	10.70	14.50	
25	8.61	10.00	9.76	13.50	13.13	10.08	8.18	12.27	9.10	8.54	10.70	12.92	
26	37.76	10.25	17.87	133.83	13.13	9.88	8.00	61.93	9.49	8.54	10.70	12.23	
27	22.23	84.41	40.87	17.93	13.13	9.48	8.00	14.14	1.06	8.91	10.70	12.23	
28	10.78	36.45	16.01	12.93	12.68	9.68	7.83	10.28	10.28	9.10	10.70	12.23	
29	9.53	-----	12.12	11.56	12.00	10.50	41.69	10.06	9.29	8.73	11.13	12.23	
30	8.42	-----	10.78	11.13	12.69	15.97	17.76	9.68	9.88	8.92	11.56	12.23	
31	7.60	-----	9.76	-----	235.99	-----	10.91	9.68	-----	9.68	-----	17.48	
MEAN	10.22	15.50	58.43	19.93	82.29	11.74	71.81	77.14	9.29	9.41	10.60	52.38	
INCHES	0.24	0.32	1.34	0.44	1.89	0.25	1.69	1.77	0.21	0.22	0.22	1.11	

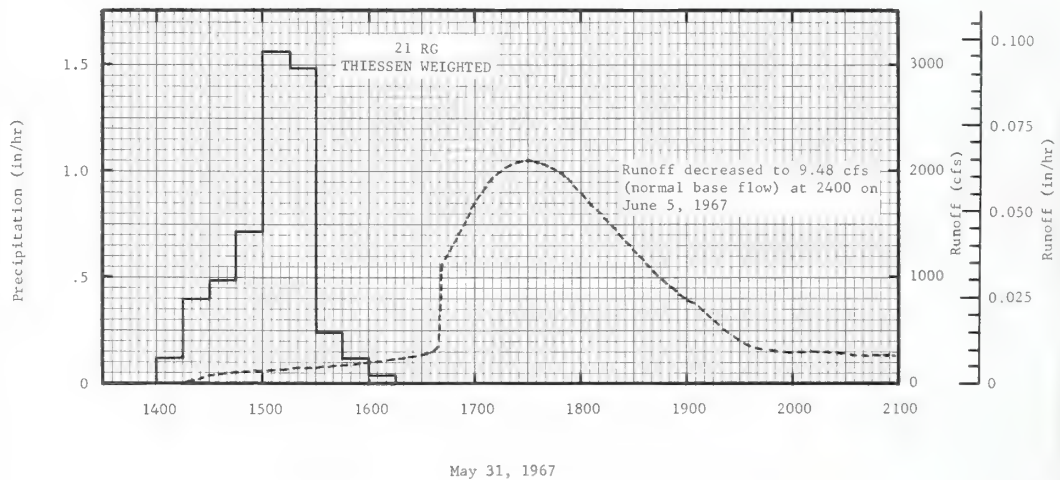
NOTES: TO CONVERT DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY 0.0007415. QUALITY OF RECORDS: GOOD, ESTIMATED TO BE WITHIN 10% OF ACTUAL.

1967			SELECTED RUNOFF EVENT				DATE: 1967 1967			
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)
			Event of May 31 - June 5, 1967 1/							
5-31	2.16	3/.005	5-31	21 RG	AVG 4/		5-31	1402	12.90	
				1410	.08	.08		1416	16.41	
				1415	.12	.20		1422	7.77	
				1430	.09	.13		1435	100.34	.0013
				1445	.48	.60		1455	104.34	.11
				1500	.72	.92		1505	107.00	.0008
				1515	1.20	1.20		1520	100.00	.0008
				1530	1.4	1.19		1628	27.00	.0103
				1545	.20	1.25		1635	100.00	.0008
				1600	.12	1.20		1645	1122.00	.0103
				1615	.6	1.29		1655	1410.00	.0198
				1700				1705	100.00	.0008
				1710				1715	100.00	.0008
				1720				1725	100.00	.0008
				1730				1735	100.00	.0008
				1740				1750	100.00	.0008
				1750				1800	100.00	.0008
				1805				1815	1338.00	.0103
				1850				1900	100.00	.0008
				1905				1915	756.00	.0103
				1920				1930	100.00	.0008
				1945				1955	100.00	.0008
				2000				2005	300.31	.0008
				2100				2105	275.01	.0008
				2214				2215	217.26	.0008
				2215				2215	164.46	.0008

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.0000309. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 62.5-5. 1/ ISOHYETAL MAP ON P. 62.11-4. 2/ RAINFALL PRIOR TO 1400 ON 5-31-67. 3/ RUNOFF PRIOR TO 1402 ON 5-31-67. FOR 30-DAY ANTECEDENT P AND Q, SEE TABLES ON THIS AND PREVIOUS PAGE. 4/ THIESSEN WEIGHTED STORM RAINFALL, RAIN GAGES 2, 4-9, 13-15, 17-20, 22 AND 28-31. AND 33. DAILY TOTALS FOR INDIVIDUAL RAIN GAGES LISTED ON PP. 62.11-2 AND 62.11-3.

1967 SELECTED RUNOFF EVENT			OXFORD, MISSISSIPPI				WATERSHED W-17 62.5			
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)
Event of May 31 - June 5, 1967 - Continued										
							5-31	2400	121.24	.1692
							6-1	0130	79.24	.1739
								0300	52.57	.1771
								0600	35.55	.1814
								0900	24.11	.1841
								1100	10.24	.1861
								2400	14.11	.1922
							6-2	2400	13.56	.2027
							6-3	2400	12.45	.2127
							6-4	2400	10.76	.2211
							6-5	2400	1/ 9.48	.2288

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.0000309. 1/ NORMAL BASE FLOW.



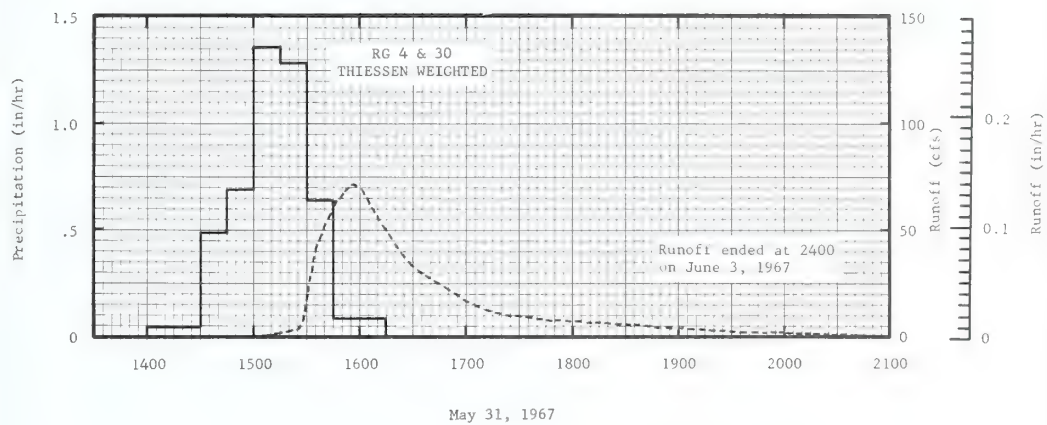
OXFORD, MISSISSIPPI WATERSHED W-17

MONTHLY PRECIPITATION AND RUNOFF (inches)						OXFORD, MISSISSIPPI WATERSHED W-24 ^{1/} AREA—512 ACRES										62.07
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	P 2/ Q	1.62 .06	3.36 .45	4.90 1.50	5.31 .58	8.19 1.49	1.83 .04	8.05 1.07	7.79 2.44	1.06 .02	2.01 .03	1.72 .00	7.10 .84	52.94 8.52		
STA AV3/P (57-67) Q		3.66 .97	5.11 1.60	4.89 1.44	4.51 1.07	4.34 .64	3.06 .12	4.36 .24	3.69 .32	3.95 .18	2.06 .06	4.04 .41	5.05 .89	48.72 7.94		
MEAN P 4/ 48 YR		5.67	5.27	5.93	5.06	4.66	3.76	4.40	3.27	3.45	2.88	4.51	5.13	53.99		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	8-2	.97	8-2	.90	8-2	1.36	8-2	1.54	8-2	1.75	8-2	1.87	8-2	2.18	8-2	2.33
MAXIMUMS FOR PERIOD OF RECORD																
1957 TO 1967	2-23 1962	1.04	2-23 1962	.90	2-23 1962	1.36	2-23 1962	1.64	2-23 1962	1.86	3-28 1965	2.39	1-30 1957	3.16	3-24 1965	5.32
NOTES: Watershed conditions: About 4% in cultivation (cotton and corn), fair cover November to March, poor cover April and May improving to good by mid-July; 13% in pasture and idle land, good cover April to October with fair cover remainder of year; 81% in woods, good cover; 2% in bare gullies. Percentages of total area in various land use categories are based on the latest survey completed in 1968. 1/ About 7% of drainage area above small desilting and retention dams. 2/ Monthly precipitation Thiessen weighted from rain gages 4 and 30. 3/ Precipitation and runoff records began Jan. 1957. 4/ Mean P based on 48-yr (1920-67) U. S. Weather Bureau record period at Holly Springs 2N, Miss.																
1967 DAILY PRECIPITATION (inches)						OXFORD, MISSISSIPPI WATERSHED W-24										62.07
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC				
1	.00	.00	.00	.00	1.81	.00	.02	.27	.00	.00	.21	.00				
2	.00	.80	.00	.00	.01	.00	1.16	4.34	.00	.00	.00	1.70				
3	.00	.00	.00	.00	.00	.00	.00	.63	.00	.00	.19	.00				
4	.00	.00	.00	.00	.00	.00	.00	.31	.00	.00	.00	.00				
5	.00	.00	.80	.00	.00	.00	1.09	.00	.00	.00	.00	.00				
6	.00	.00	2.92	.00	2.70	.00	.00	.00	.00	.00	.00	.09				
7	.05	.00	.00	.00	.00	.00	.00	.09	.14	.00	.00	.00				
8	.00	.00	.00	.00	.00	.00	.00	.00	.55	.07	.00	.00				
9	.00	.00	.00	.00	.00	.00	3.15	.00	.00	.00	.00	.86				
10	.00	.00	.00	.10	.00	.00	.00	.00	.00	.00	.00	.15				
11	.00	.00	.00	.00	.00	.00	.09	.00	.01	.00	.34	.40				
12	.00	.00	.00	.00	.00	.00	.17	.00	.00	.00	.00	.00				
13	.58	.00	.00	.46	.00	.00	.40	.00	.00	.00	.00	.00				
14	.07	.00	.00	.79	.39	.00	.00	.00	.00	.00	.00	.54				
15	.00	.00	.00	.00	.23	.00	.00	.00	.00	.00	.00	.23				
16	.00	.16	.00	.00	.00	.00	.00	.00	.00	1.44	.00	.00				
17	.00	.25	.00	.00	.00	.00	.00	.07	.00	.12	.00	.72				
18	.00	.02	.00	.00	.00	.00	.00	.54	.00	.00	.00	.00				
19	.00	.34	.06	.00	.00	.00	.00	.00	.00	.00	.00	.00				
20	.00	.69	.17	.00	.23	.09	.37	.00	.00	.00	.07	1.15				
21	.00	.00	.00	.22	.84	.48	.01	.00	.03	.00	.11	.66				
22	.00	.00	.00	.08	.00	.19	.23	.00	.00	.00	.05	.00				
23	.00	.00	.00	1.97	.00	.18	.00	.00	.00	.00	.02	.00				
24	.00	.00	.00	.00	.00	.00	.00	1.02	.00	.07	.00	.00				
25	.00	.00	.00	.69	.00	.00	.57	.00	.00	.00	.00	.00				
26	.92	.00	.82	.62	.00	.02	.13	.46	.00	.00	.00	.00				
27	.00	1.10	.13	.00	.00	.00	.00	.06	.33	.00	.00	.055				
28	.00	.00	.00	.00	.00	.00	.41	.00	.00	.00	.00	.00				
29	.00	.00	.00	.00	.00	.04	.25	.00	.00	.00	.52	.00				
30	.00	.00	.00	.38	.55	.83	.00	.00	.00	.22	.21	.11				
31	.00	.00	.00	.00	1.43	.00	.00	.00	.00	.09	.00	.44				
TOTAL	1.62	3.36	4.90	5.31	8.19	1.83	8.05	7.79	1.06	2.01	1.72	7.10				
STA AV	3.66	5.11	4.89	4.51	4.34	3.06	4.36	3.69	3.95	2.06	4.04	5.05				
NOTES: FOR DAILY AIR TEMPERATURES IN THE VICINITY, SEE TABLE FOR WATERSHED W-4A, P. 62.1-1. DAILY PRECIPITATION VALUES THIESSEN WEIGHTED FROM RAIN GAGES 4 AND 30. STATION AVERAGE IS FOR 11-YR (1957-67) RECORD PERIOD.																

Cooperative Research Project of USDA, University of Mississippi, and Mississippi State Agricultural Experiment Station

NOTES TO CONVERT DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY 0.046488. QUALITY OF RECORDS: FAIR, ESTIMATED TO BE WITHIN 15% OF ACTUAL.

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.001937. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 62.7-4. 1/ ISOHYETAL MAP ON P. 62.11-4. 2/ RAINFALL PRIOR TO 1400 ON 5-31-67. 3/ RUNOFF PRIOR TO 1506 ON 5-31-67. FOR 30-DAY ANTECEDENT P AND Q, SEE TABLES ON THIS AND PREVIOUS PAGE. 4/ THIESSEN WEIGHTED STORM RAINFALL, RAIN GAGES 4 AND 30. DAILY TOTALS FOR INDIVIDUAL RAIN GAGES LISTED ON PP. 62.11-2 AND 62.11-3.



OXFORD, MISSISSIPPI WATERSHED W-24

MONTHLY PRECIPITATION AND RUNOFF (inches)							OXFORD, MISSISSIPPI				WATERSHED W-28 ^{1/}				62.08			
							AREA—1,080 ACRES (1.69 SQ. MILES)											
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL				
1967	P ^{2/}	1.58	2.91	4.04	4.38	6.96	2.32	6.05	8.52	0.80	2.16	1.95	8.44	50.11				
	C	.00	.00	.06	.02	.48	.03	.50	1.94	.00	.00	.00	1.06	4.09				
STA AV3/P (57-67) Q		3.55	5.02	4.76	4.38	3.95	3.15	4.28	3.44	4.27	2.13	4.05	5.08	48.06				
		.34	.50	.45	.26	.17	.05	.13	.22	.13	.04	.13	.33	2.75				
MEAN P ^{4/}																		
48 YR		5.67	5.27	5.93	5.06	4.66	3.76	4.40	3.27	3.45	2.88	4.51	5.13	53.99				
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																		
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL															
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS			
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME		
1967	8-2	.03	8-2	.57	8-2	.90	8-2	1.22	8-2	1.39	8-2	1.43	8-2	1.62	8-2	1.66		
MAXIMUMS FOR PERIOD OF RECORD																		
19 57 TO	8-2	.63	8-2	.57	8-2	.90	8-2	1.22	8-2	1.39	1-31	1.45	1-30	2.02	1-27	2.68		
19 67	1967		1967		1967		1967		1967		1957		1957		1957			
NOTES: Watershed conditions: About 12% in cultivation (cotton and corn), fair cover November to March, poor cover April and May improving to good by mid-July; 29% in pasture and idle land, good cover April to October with fair cover remainder of year; 58% in woods, good cover; 1% in bare gullies. Percentages of total area in various land use categories are based on the latest survey completed in 1967. ^{1/} About 61% of drainage area above small desilting and retention dams. ^{2/} Monthly precipitation Thiessen weighted from rain gages 5, 6, and 7. ^{3/} Precipitation and runoff records began Jan. 1957. ^{4/} Mean P based on 48-yr (1920-67) U. S. Weather Bureau record period at Holly Springs 2N, Miss.																		
1967 DAILY PRECIPITATION (inches)							OXFORD, MISSISSIPPI								WATERSHED W-28		62.08	
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC						
1	.00	.00	.00	.00	1.50	.00	.17	.32	.00	.00	.20	.00						
2	.00	.32	.00	.00	.05	.00	.66	4.59	.00	.00	.00	1.52						
3	.00	.00	.00	.00	.00	.00	.00	.58	.00	.00	.17	.00						
4	.00	.00	.00	.00	.00	.00	.00	.29	.00	.00	.00	.00						
5	.00	.00	.44	.00	.00	.00	1.29	.00	.00	.00	.00	.00						
6	.00	.00	2.22	.00	2.20	.00	.00	.00	.00	.00	.00	.15						
7	.09	.00	.00	.00	.00	.00	.00	.05	.19	.00	.00	.00						
8	.00	.00	.00	.00	.00	.00	.00	.00	.26	.03	.00	.00						
9	.00	.00	.00	.00	.00	.02	2.44	.08	.00	.00	.00	1.73						
10	.00	.00	.00	.06	.00	.00	.00	.00	.00	.00	.00	.17						
11	.00	.00	.00	.00	.00	.00	.06	.00	.00	.00	.36	.40						
12	.00	.00	.00	.00	.00	.00	.08	.00	.00	.00	.00	.00						
13	.55	.00	.00	.52	.00	.00	.23	.00	.00	.00	.00	.00						
14	.06	.00	.00	.84	.22	.00	.00	.00	.00	.00	.00	.42						
15	.00	.01	.00	.00	.22	.00	.00	.00	.00	.00	.00	.20						
16	.00	.16	.00	.00	.00	.00	.00	.00	.00	.00	1.62	.00						
17	.00	.28	.00	.00	.00	.00	.00	.09	.00	.11	.00	.89						
18	.00	.00	.00	.00	.00	.01	.00	.23	.00	.00	.00	.00						
19	.00	.36	.06	.00	.00	.00	.00	.00	.00	.00	.00	.00						
20	.00	.70	.22	.00	.39	.04	.09	.00	.00	.00	.08	1.35						
21	.00	.00	.00	.00	.84	.33	.00	.00	.11	.00	.20	1.00						
22	.00	.00	.00	.09	.00	.58	.22	.00	.00	.00	.09	.00						
23	.00	.00	.00	1.37	.00	.67	.00	.00	.00	.00	.02	.00						
24	.00	.00	.00	.00	.00	.00	.00	.28	.00	.08	.00	.00						
25	.00	.00	.00	.77	.00	.00	.06	.00	.00	.00	.00	.00						
26	.88	.00	.93	.48	.00	.02	.14	1.93	.00	.00	.00	.00						
27	.00	1.08	.17	.00	.00	.00	.00	.08	.24	.00	.00	.065						
28	.00	.00	.00	.00	.00	.00	.38	.00	.00	.00	.00	.00						
29	.00	.00	.00	.00	.00	.07	.23	.00	.00	.00	.56	.00						
30	.00	--	.00	.30	.20	.58	.00	.00	.00	.24	.27	.12						
31	.00	.00	.00	.00	1.34	.00	.00	.00	.08	.00	.43							
TOTAL	1.58	2.91	4.04	4.38	6.96	2.32	6.05	8.52	8.00	2.16	1.95	8.44						
MEAN	3.55	5.02	4.76	4.38	3.95	3.15	4.28	3.44	4.27	2.13	4.05	5.08						
NOTES: FOR DAILY AIR TEMPERATURES IN THE VICINITY, SEE TABLE FOR WATERSHED W-4A, P. 62.1-1. DAILY PRECIPITATION VALUES THIENSEN WEIGHTED FROM RAIN GAGES 5, 6 AND 7. STATION AVERAGE IS FOR 11-YR (1957-67) RECORD PERIOD.																		

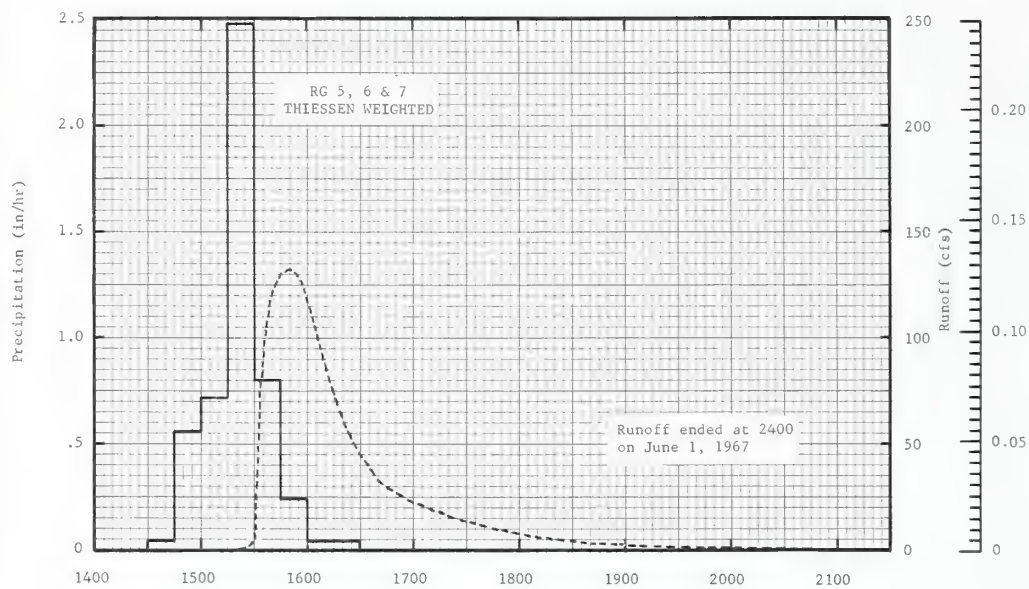
Cooperative Research Project of USDA, University of Mississippi, and Mississippi State Agricultural Experiment Station

1967 MEAN DAILY DISCHARGE (cfs)					OXFORD, MISSISSIPPI				WATERSHED 1-2				62.62
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	
1	.00	.00	.00	.00	1.30	.03	.00	.00	.00	.00	.00	.00	
2	.00	.00	.00	.00	.06	.00	.59	64.81	.00	.00	.00	.00	
3	.00	.00	.00	.00	.00	.00	.00	.31	.00	.00	.00	.00	
4	.00	.00	.00	.00	.00	.00	.00	10.24	.00	.00	.00	.00	
5	.00	.00	.00	.00	.00	.00	3.99	.08	.00	.00	.00	.00	
6	.00	.00	2.90	.00	11.79	.00	.00	.00	.00	.00	.00	.00	
7	.00	.00	.00	.00	2.44	.00	.00	.00	.00	.00	.00	.00	
8	.00	.00	.00	.00	.07	.00	.00	.00	.00	.00	.00	.00	
9	.00	.00	.00	.00	.00	.00	18.34	.00	.00	.00	.00	7.91	
10	.00	.00	.00	.00	.08	.00	.00	.00	.00	.00	.00	1.29	
11	.00	.00	.00	.00	.18	.00	.00	.00	.00	.00	.00	.00	
12	.00	.00	.00	.00	.06	.00	.00	.00	.00	.00	.00	.00	
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
14	.00	.00	.00	.00	.02	.00	.00	.00	.00	.00	.00	.00	
15	.00	.00	.00	.00	.05	.00	.00	.00	.00	.00	.00	.00	
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.11	
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	11.20	
21	.00	.00	.00	.00	.06	.00	.00	.00	.00	.00	.00	11.71	
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	2.79	
23	.00	.00	.00	.77	.00	1.12	.00	.00	.00	.00	.00	.32	
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.7	
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
26	.00	.00	.00	.00	.00	.00	.00	12.69	.00	.00	.00	.39	
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
29	.00	---	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01	
30	.00	-----	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
31	.00	-----	.00	-----	5.56	-----	.00	.00	-----	.00	--	.3	
MEAN	.00	.00	.09	.03	.70	.04	.74	2.84	.00	.00	.00	1.55	
INCHES	.00	.00	.06	.02	.48	.03	.50	1.94	.00	.00	.00	1.00	

NOTES: TO CONVERT DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY 0.0220387. QUALITY OF RECORDS: FAIR, ESTIMATED TO BE WITHIN 15% OF ACTUAL.

1967			SELECTED RUNOFF EVENT				OXFORD, MISSISSIPPI				WATERSHED 1-2		62.62		
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF								
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)					
Event of May 31 - June 1, 1967 1/															
5-31	2/.10	.0000	5-31	5:35	.2/		5-31	1522	.00	.0000					
				14:50	.00	.00		15:22	.00	.0000					
				14:55	.04	.01		15:35	.00	.0000					
				15:00	.56	.15		15:40	121.00	.0100					
				15:15	.72	.25		15:55	133.10	.0100					
				15:30	.40	.05		16:05	141.00	.0100					
				15:45	.00	1.15		16:10	141.00	.0100					
				16:00	.24	1.21		16:20	141.00	.0100					
				16:15	.04	1.22		17:12	141.00	.0100					
				16:30	.04	1.25		1742	141.00	.0100					
Watershed conditions: 12% of area in cultivation, chiefly cotton and corn, generally poor cover; 10% in pasture, and 19% idle, fair to good cover; 58% in woods, good cover; 1% in bare gullies.															
								18:22	8.00	.1100					
								19:12	1.00	.0100					
								20:02	.00	.0000					
								22:06	.10	.1224					
								23:58	.07	.1225					
								24:00	.07	.1225					
							6-1	24:00	.00	.1225					

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.0009183. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 62.8-5. 1/ ISOHYETAL MAP ON P. 62.11-4. 2/ RAINFALL PRIOR TO 1430 ON 5-31-67. FOR 30-DAY ANTECEDENT P AND Q, SEE TABLES ON THIS AND PREVIOUS PAGE. 3/ THIESSEN WEIGHTED STORM RAINFALL, RAIN GAGES 5, 6 AND 7. DAILY TOTALS FOR INDIVIDUAL RAIN GAGES LISTED ON PP. 62.11-2 AND 62.11-3.



May 31, 1967

OXFORD, MISSISSIPPI WATERSHED W-28

MONTHLY PRECIPITATION AND RUNOFF (inches)							OXFORD, MISSISSIPPI WATERSHED W-32 ^{1/} AREA—20,000 ACRES (31.3 SQ. MILES)							62.10		
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	P ^{2/} Q	1.59 .07	3.00 .17	4.79 1.96	4.29 .12	8.85 2.86	1.63 .01	8.39 2.19	5.62 1.84	1.33 .00	2.20 .00	2.30 .00	7.64 1.08	51.63 10.30		
STA AV3/P (57-67) Q		3.64 1.04	5.10 1.75	4.87 1.81	4.64 1.04	4.61 1.01	2.98 .15	4.37 .42	3.57 .37	4.58 .46	2.04 .08	4.12 .55	5.20 1.33	49.72 10.01		
MEAN P ^{4/} 48 YR		5.67	5.27	5.93	5.06	4.66	3.76	4.40	3.27	3.45	2.88	4.51	5.13	53.99		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	7-9	.51	7-9	.50	7-9	.96	7-9	1.76	5-6	2.00	5-6	2.23	5-6	2.26	4-30	2.52
MAXIMUMS FOR PERIOD OF RECORD																
1957 TO 1967	2-23 1962	.57	2-23 1962	.56	7-9 1967	.96	12-3 1964	1.94	12-3 1964	2.45	12-3 1964	3.48	12-3 1964	3.72	3-24 1965	6.13
NOTES: Watershed conditions: About 29% in cultivation (cotton, corn and soybeans), fair cover November to March, poor cover April and May improving to good by mid-July; 39% in pasture and idle land, good cover April to October with fair cover remainder of year; 30% in woods, good cover; 2% in bare gullies. Percentages of total area in various land use categories are based on the latest survey completed in 1964. 1/ About 14% of drainage area above small desilting and retention dams. 2/ Monthly precipitation Thiessen weighted from 10 rain gages. 3/ Precipitation and runoff records began Jan. 1957. 4/ Mean P based on 48-yr (1920-67) U.S. Weather Bureau record period at Holly Springs 2N, Miss.																
1967 DAILY PRECIPITATION (inches)							OXFORD, MISSISSIPPI WATERSHED W-32 ^{1/}							62.1		
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC				
1	.00	.00	.00	.00	1.21	.00	.42	.02	.00	.00	.24	.00				
2	.00	.35	.00	.00	.02	.00	.58	3.62	.00	.00	.01	1.36				
3	.00	.00	.00	.00	.00	.00	.00	.21	.00	.00	.20	.00				
4	.00	.00	.00	.00	.00	.00	.00	.39	.00	.00	.00	.00				
5	.00	.00	.62	.00	.00	.00	1.75	.00	.00	.00	.00	.00				
6	.00	.00	2.43	.00	3.64	.00	.01	.00	.00	.00	.00	.16				
7	.00	.00	.00	.00	.00	.00	.00	.04	.27	.00	.00	.00				
8	.00	.00	.00	.00	.00	.00	.00	.00	.40	.07	.00	.00				
9	.00	.00	.00	.00	.00	.00	3.64	.00	.00	.00	.00	1.27				
10	.00	.00	.00	.07	.00	.00	.00	.00	.00	.00	.00	.09				
11	.00	.00	.00	.00	.00	.00	.04	.00	.10	.00	.37	.49				
12	.00	.00	.00	.00	.00	.00	.05	.00	.00	.00	.00	.00				
13	.55	.00	.00	.54	.00	.00	.36	.00	.00	.00	.00	.00				
14	.07	.00	.00	.84	.41	.00	.00	.00	.00	.00	.00	.52				
15	.00	.02	.00	.00	.26	.00	.00	.00	.00	.10	.00	.21				
16	.00	.14	.00	.00	.00	.00	.00	.00	.00	1.41	.00	.00				
17	.00	.30	.00	.00	.00	.00	.00	.05	.00	.08	.00	.00				
18	.00	.00	.00	.00	.00	.00	.00	.39	.00	.00	.00	.00				
19	.00	.40	.02	.00	.00	.00	.00	.00	.00	.00	.00	.00				
20	.00	.70	.17	.00	.48	.02	.01	.08	.00	.00	.00	.00				
21	.00	.00	.00	.11	.85	.44	.01	.00	.29	.00	.26	.68				
22	.00	.00	.00	.15	.00	.23	.10	.00	.00	.00	.41	.00				
23	.00	.00	.00	1.03	.00	.09	.00	.00	.00	.00	.04	.00				
24	.00	.00	.00	.00	.00	.00	.00	.01	.00	.11	.00	.00				
25	.00	.00	.00	.76	.00	.00	.02	.01	.00	.00	.00	.00				
26	.97	.00	1.30	.32	.00	.00	.16	.54	.00	.00	.00	.00				
27	.00	1.09	.25	.00	.00	.00	.00	.06	.27	.00	.00	.00				
28	.00	.00	.00	.00	.00	.03	.66	.00	.00	.00	.00	.00				
29	.00	--	.00	.00	.00	.09	.58	.00	.00	.00	.59	.00				
30	.00	--	.00	.47	.59	.73	.00	.00	.00	.32	.19	.13				
31	.00	--	.00	--	1.35	.00	.00	.00	.11	--	--	.42				
TOTAL	1.59	3.00	4.79	4.29	8.85	1.63	8.39	5.62	1.33	2.20	2.30	7.64				
STA AV	3.64	5.10	4.87	4.64	4.61	2.98	4.37	3.57	4.58	2.04	4.12	5.20				
NOTES: FOR DAILY AIR TEMPERATURES IN THE VICINITY, SEE TABLE FOR WATERSHED W-4A, P. 62.1-1. DAILY PRECIPITATION VALUES THIESSEN WEIGHTED FROM RAIN GAGES 3, 10-14, 20, 21, 24 AND 26. STATION AVERAGE IS FOR 11-YR (1957-67) RECORD PERIOD.																

Cooperative Research Project of USDA, University of Mississippi, and Mississippi State Agricultural Experiment Station

1967 MEAN DAILY DISCHARGE (cfs)						OXFORD, MISSISSIPPI						WATERSHED #32		62.10	
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC			
1	.00	.00	2.53	.00	185.99	4.62	.06	.00	.00	.00	.00	.00			
2	.00	.00	.80	.00	27.70	.00	13.89	1416.21	.00	.00	.00	.00	147.23		
3	.00	.00	.36	.00	.72	.00	.14	11.59	.00	.00	.00	.00	.21		
4	.00	.00	.18	.00	.05	.00	.00	112.76	.00	.00	.00	.00	.00		
5	.00	.00	.06	.00	.00	.00	137.90	.27	.00	.00	.00	.00	.00		
6	.00	.00	1549.83	.00	1349.95	.00	10.49	.04	.00	.00	.00	.00	.00		
7	.00	.00	47.52	.00	545.66	.00	.10	.00	.00	.00	.00	.00	.00		
8	.00	.00	3.29	.00	8.96	.00	.00	.00	.00	.00	.00	.00	.00		
9	.00	.00	.04	.00	1.20	.00	1574.81	.00	.00	.00	.00	.00	15.59		
10	.00	.00	.00	.00	.30	.00	18.59	.00	.00	.00	.00	.00	39.59		
11	.00	.00	.00	.00	.15	.00	.08	.00	.00	.00	.00	.00	.30		
12	.00	.00	.00	.00	.00	.00	.04	.00	.00	.00	.00	.00	.01		
13	.00	.00	.00	.00	.00	.00	78.34	.00	.00	.00	.00	.00	.00		
14	.00	.00	.00	10.00	.11	.00	.30	.00	.00	.00	.00	.00	.00		
15	.00	.00	.00	.04	3.46	.00	.00	.00	.00	.00	.00	.00	.94		
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.05		
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	79.04		
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	29.94		
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	2.33		
20	.00	39.08	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	446.12		
21	.00	6.05	.00	.00	6.93	.00	.00	.00	.00	.00	.00	.00	123.64		
22	.00	.63	.00	.00	3.76	.00	.00	.00	.00	.00	.00	.00	18.57		
23	.00	.07	.00	49.35	.00	.00	.00	.00	.00	.00	.00	.00	.07		
24	.00	.00	.00	.06	.00	.00	.00	.00	.00	.00	.00	.00	.00		
25	.00	.00	.00	.60	.00	.00	.00	.00	.00	.00	.00	.00	.00		
26	46.10	.00	1.65	43.81	.00	.00	.00	8.44	.00	.00	.00	.00	.00		
27	9.39	78.53	37.10	.45	.00	.00	.00	.02	.00	.00	.00	.00	.00		
28	.04	20.98	.51	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		
29	.00	-----	.00	.00	.00	.00	7.69	.00	.00	.00	.00	.00	.00		
30	.00	-----	.00	.01	2.10	3.47	2.02	.00	.00	.00	.00	.00	.00		
31	.00	-----	.00	-----	263.86	.00	.00	.00	-----	.00	-----	.00	6.07		
MEAN	1.79	5.19	53.03	3.48	77.45	.27	59.49	49.98	.00	.00	.00	.00	29.32		
INCHES	.07	.17	1.96	.12	2.86	.01	2.19	1.84	.00	.00	.00	.00	1.08		

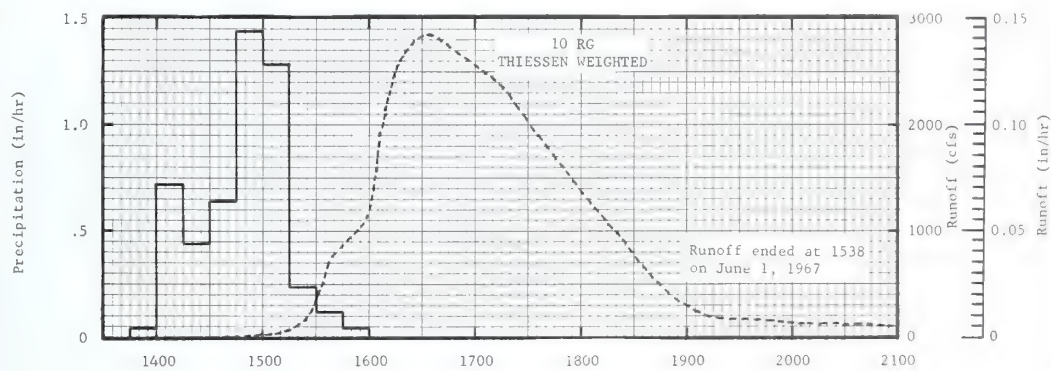
NOTES TO CONVERT DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY 0.0011901. QUALITY OF RECORDS: GOOD, ESTIMATED TO BE WITHIN 10% OF ACTUAL.

1967 SELECTED RUNOFF EVENT							OXFORD, MISSISSIPPI					WATERSHED #32		62.10	
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF								
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)					
Event of May 31 - June 1, 1967 1/															
5-31	2/.11	3/.0002	5-31	10:45	1.47	.00	5-31	10:55	.11	.00					
				1345	.70	.00		1444	5.10	.01					
				1410	.04	.01		1510	54.13	.01					
				1415	.72	.19		1524	157.15	.01					
				1420	.44	.39		1530	722.03	.01					
				1445	.06	.46		1550	1122.56	.01					
				1510	1.00	.67		1600	1910.00	.01					
				1515	1.28	1.14		1610	2440.00	.0474					
				1520	.72	1.20		1634	2090.00	.0811					
				1545	.12	1.23		1650	2090.00	.1277					
Watershed conditions: 29% of area in cultivation, chiefly cotton, corn and soybeans, generally poor cover; 15% in pasture and 24% idle, fair to good cover; 30% in woods, good cover; 2% in bare gullies.															
				1600	.4	1.24		1716	2300.00	.17					
								1758	1400.00	.2074					
								1800	478.73	.2000					
								1800	241.96	.2000					
								1810	190.47	.2000					
								1934	100.00	.0000					
								1948	163.00	.2074					
								2000	100.00	.2000					
								2000	110.00	.2000					
								2100	70.00	.2000					
								2234	00.00	.0000					
								2300	50.00	.2000					
								0000	25.82	.2000					
								0124	01.00	.0100					
								0244	17.00	.3170					

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.0000496. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 62.10-5. 1/ ISOHYETAL MAP ON P. 62.11-4. 2/ RAINFALL PRIOR TO 1345 ON 5-31-67. 3/ RUNOFF PRIOR TO 1358 ON 5-31-67. FOR 30-DAY ANTECEDENT P AND Q, SEE TABLES ON THIS AND PREVIOUS PAGE. 4/ THIESSEN WEIGHTED STORM RAINFALL, RAIN GAGES 3, 10-14, 20, 21, 24 AND 26. DAILY TOTALS FOR INDIVIDUAL RAIN GAGES LISTED ON PP. 62.11-2 AND 62.11-3.

14.7 SELECTED RUNOFF EVENT			DATE . 1967									
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF					
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE cfs	ACC. inches		
Event of May 31 - June 1, 1967 - Continued												
							6-1				1	1

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.000496.



May 31, 1967

OXFORD, MISSISSIPPI WATERSHED W-32

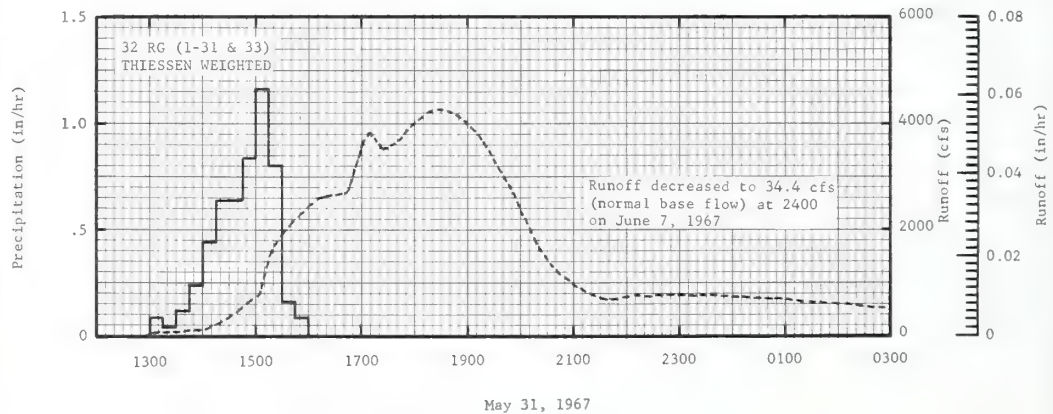
MONTHLY PRECIPITATION AND RUNOFF (inches)						OXFORD, MISSISSIPPI AREA--75,000 ACRES (117.2 SQ. MILES)						WATERSHED W-34 ^{1/}		62.11			
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967	P 2/	1.55	2.98	4.71	4.78	8.38	1.82	8.56	6.46	1.13	2.27	1.94	8.15	52.73			
	Q 3/	.41	.52	1.90	.72	2.82	.44	2.62	2.45	.32	.33	.34	1.87	14.74			
STA AV4/P (57-67)	Q	3.59	5.01	4.83	4.64	4.33	3.09	4.39	3.97	4.30	2.02	3.96	5.20	49.33			
		1.28	1.85	1.95	1.29	1.17	.49	.77	.71	.73	.38	.80	1.52	12.94			
MEAN	P 5/																
48 YR	Q 5/	5.67	5.27	5.93	5.06	4.66	3.76	4.40	3.27	3.45	2.88	4.51	5.13	53.99			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																	
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL														
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS		
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	
1967	7-9	.15	7-9	.15	7-9	.29	7-9	.80	7-9	1.41	7-9	1.75	8-2	1.88	4-30	2.18	
MAXIMUMS FOR PERIOD OF RECORD																	
1957 TO 1967	7-9 1967	.15	7-9 1967	.15	7-9 1967	.29	7-9 1967	.80	7-9 1967	1.41	12-3 1964	2.23	12-3 1964	2.72	3-24 1965	4.77	
NOTES: Watershed conditions: About 24% in cultivation (cotton, corn and soybeans), fair cover November to March, poor cover April and May improving to good by mid-July; 35% in pasture and idle land, good cover April to October with fair cover remainder of year; 39% in woods, good cover; 1% in bare gullies; 1% urban. Percentages of total area in various land use categories are based on the latest survey completed in 1965. 1/ About 18% of area, principally in upper reaches, above small desilting and retention dams. 2/ Monthly precipitation Thiessen weighted from 32 rain gages. 3/ Monthly values of runoff include small amounts of flow through auxiliary Station 34-A. 4/ Precipitation and runoff records began Jan. 1957. 5/ Mean P based on 48-yr (1920-67) U.S. Weather Bureau record period at Holly Springs 2N, Miss.																	
1967 DAILY PRECIPITATION (inches)						OXFORD, MISSISSIPPI WATERSHED W-34										62.11	
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC					
1	.00	.00	.00	.00	1.37	.00	.20	.13	.00	.00	.21	.00					
2	.00	.47	.00	.00	.03	.00	.77	3.94	.00	.00	.01	1.76					
3	.00	.00	.00	.00	.00	.00	.00	.47	.00	.00	.20	.00					
4	.00	.00	.00	.00	.00	.00	.00	.43	.00	.00	.00	.00					
5	.00	.00	.60	.00	.00	.00	1.60	.00	.00	.00	.00	.00					
6	.00	.00	2.59	.00	3.20	.00	.00	.00	.00	.00	.00	.13					
7	.01	.00	.00	.00	.00	.00	.00	.12	.21	.00	.00	.00					
8	.00	.00	.00	.00	.00	.00	.00	.00	.45	.00	.00	.00					
9	.00	.00	.00	.00	.00	.00	3.56	.01	.00	.00	.00	1.24					
10	.00	.00	.00	.08	.00	.00	.00	.00	.00	.00	.00	.11					
11	.00	.00	.00	.00	.00	.00	.10	.00	.06	.00	.30	.41					
12	.00	.00	.00	.00	.00	.00	.30	.00	.00	.00	.00	.00					
13	.54	.00	.00	.53	.00	.00	.45	.00	.00	.00	.00	.00					
14	.07	.00	.00	.83	.43	.00	.00	.00	.00	.00	.00	.56					
15	.00	.02	.00	.00	.26	.00	.00	.00	.00	.03	.00	.22					
16	.00	.11	.00	.00	.00	.00	.00	.00	.00	1.46	.00	.00					
17	.00	.27	.00	.00	.00	.00	.00	.04	.00	.10	.00	.86					
18	.00	.01	.00	.00	.00	.05	.00	.36	.00	.00	.00	.00					
19	.00	.34	.03	.00	.00	.00	.00	.00	.00	.00	.00	.00					
20	.00	.70	.15	.00	.34	.07	.04	.03	.00	.00	.05	1.50					
21	.00	.00	.00	.15	.84	.37	.01	.00	.12	.00	.21	.75					
22	.00	.00	.00	.12	.00	.29	.16	.00	.00	.00	.17	.00					
23	.00	.00	.00	1.33	.00	.16	.00	.00	.00	.00	.03	.00					
24	.00	.00	.00	.00	.00	.00	.00	.17	.00	.22	.00	.00					
25	.00	.00	.00	.71	.00	.00	.07	.02	.00	.00	.00	.00					
26	.93	.00	1.15	.52	.00	.02	.15	.66	.00	.00	.00	.00					
27	.00	1.06	.19	.00	.00	.00	.00	.08	.29	.00	.00	.045					
28	.00	.00	.00	.00	.00	.02	.55	.00	.00	.00	.00	.00					
29	.00	.00	.00	.00	.00	.09	.60	.00	.00	.00	.55	.00					
30	.00	.00	.00	.51	.46	.75	.00	.00	.00	.29	.21	.13					
31	.00	.00	.00	.00	1.45	.00	.00	.00	.00	.09	.00	.44					
TOTAL	1.55	2.98	4.71	4.78	8.38	1.82	8.56	6.46	1.13	2.27	1.94	8.15					
54.8	3.59	5.01	4.83	4.64	4.33	3.09	4.39	3.97	4.30	2.02	3.96	5.20					
NOTES: FOR DAILY AIR TEMPERATURES IN THE VICINITY, SEE TABLE FOR WATERSHED W-4A, P. 62.1-1. DAILY PRECIPITATION VALUES THIESSEN WEIGHTED FROM RAIN GAGES 1-31 AND 33. STATION AVERAGE IS FOR 11-YR (1957-67) RECORD PERIOD.																	

Cooperative Research Project of USDA, University of Mississippi, and Mississippi State Agricultural Experiment Station

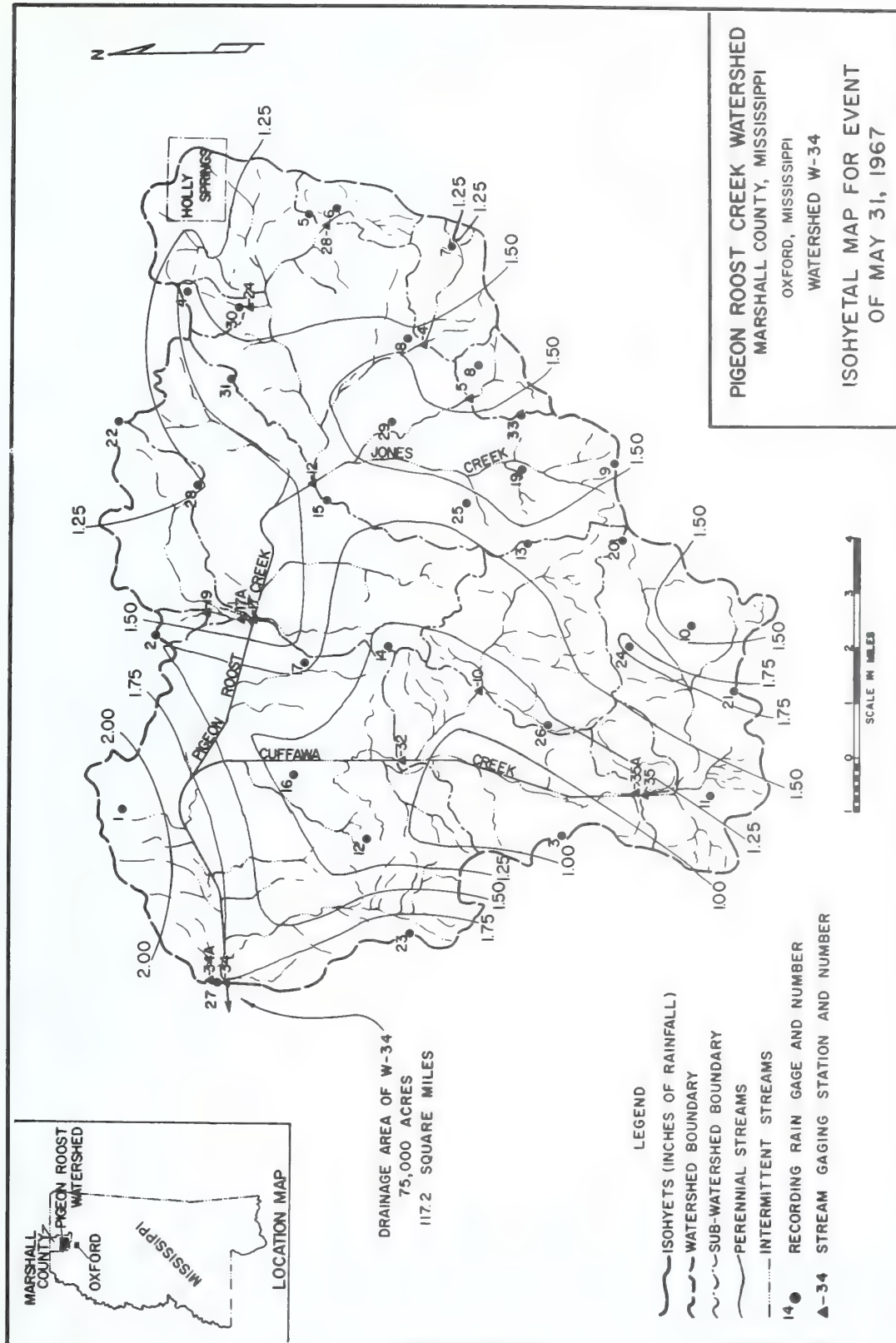
NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.00001322. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA-MISC. PUB. 945, P. 62.11-4. 1/ ISOHYETAL MAP ON P. 62.11-4. 2/ RAINFALL PRIOR TO 1300 ON 5-31-67. 3/ RUNOFF PRIOR TO 1300 ON 5-31-67. FOR 30-DAY ANTECEDENT P AND Q, SEE TABLES ON THIS AND PREVIOUS PAGE. 4/ THESSEN WEIGHTED STORM RAINFALL, RAIN GAGES 1-31 AND 33. DAILY TOTALS FOR INDIVIDUAL GAGES LISTED ON PP. 62.11-2 AND 62.11-3.

1967 SELECTED RUNOFF EVENT										
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)
Event of May 31 - June 2, 1967 - Continued										
			RG 8	1.64	RG 24	1.56	5-31	1850	4181.38	.1611
			RG 9	1.38	RG 25	1.46		1914	3739.57	.1820
			RG 10	1.36	RG 26	1.16		1934	3142.60	.1675
			RG 11	1.12	RG 27	1.69		1952	2647.17	.2090
			RG 12	1.04	RG 28	1.04		2000	2324.10	.2134
			RG 13	1.47	RG 29	1.50		2002	2235.25	.2144
			RG 14	1.05	RG 30	1.15		2016	1447.40	.2207
			RG 15	1.39	RG 31	1.27		2034	1309.22	.2271
			RG 16	1.05	RG 32	1.55		2044	1136.40	.2309
								2112	833.35	.2361
								2142	715.37	.2415
								2200	751.62	.2442
								2214	710.54	.2465
								2226	742.74	.2500
								2400	753.64	.2567
							6-1	0114	652.93	.2762
								0244	527.86	.2801
								0400	435.04	.2861
								0414	418.13	.2974
								0544	350.17	.3049
								0714	271.11	.3119
								0800	244.20	.3136
								0844	210.85	.3158
								1014	176.16	.3190
								1144	153.29	.3231
								1200	149.47	.3250
								1444	110.65	.3283
								1600	90.62	.3320
								1814	83.15	.3341
								2400	65.13	.3367
							6-2	1200	53.33	.3401
								2400	141.90	.3457

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.0001322. 1/ RUNOFF DECREASED TO 34.4 CFS (NORMAL BASE FLOW) AT 2400 ON JUNE 7, 1967.



OXFORD, MISSISSIPPI WATERSHED W-34



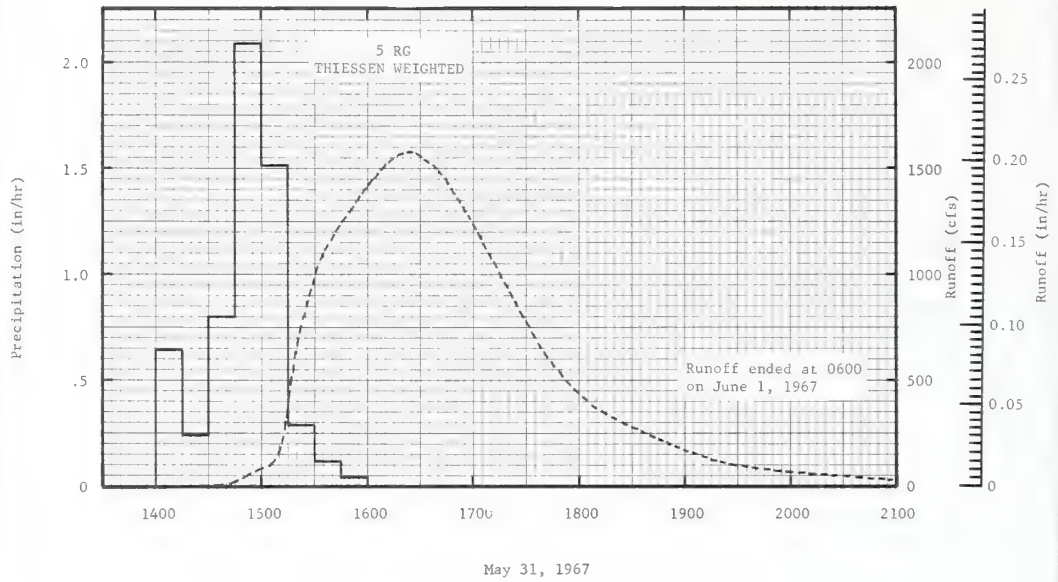
MONTHLY PRECIPITATION AND RUNOFF (inches)						OXFORD, MISSISSIPPI						WATERSHED W-35 ^{1/}		62.12		
						AREA—7,550 ACRES (11.8 SQ. MILES)										
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	P ^{2/}	1.56	3.02	4.42	3.86	9.45	1.26	7.71	5.49	1.40	2.01	2.49	7.31	49.98		
	Q	.06	.20	1.83	.08	3.83	.00	2.05	1.61	.00	.00	.00	1.07	10.73		
STA AV ^{3/} P		3.58	5.05	4.86	4.58	4.78	2.93	4.31	3.33	4.77	1.97	4.05	5.11	49.32		
(57-67) Q		1.26	1.87	1.86	1.08	1.09	.13	.39	.32	.45	.04	.51	1.30	10.30		
MEAN P ^{4/}																
48 YR		5.67	5.27	5.93	5.06	4.66	3.76	4.40	3.27	3.45	2.88	4.51	5.13	53.99		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	7-9	.82	7-9	.78	5-6	1.40	5-6	2.02	5-6	2.71	5-6	3.00	5-6	3.03	4-30	3.33
MAXIMUMS FOR PERIOD OF RECORD																
1957 TO 1967	5-26 1963	.88	5-26 1963	.84	5-26 1963	1.48	2-23 1962	2.19	5-6 1967	2.71	12-3 1964	3.09	1-30 1957	3.46	3-24 1965	5.69
NOTES: Watershed conditions: About 27% in cultivation (cotton, corn and soybeans), fair cover November to March, poor cover April and May improving to good by mid-July; 47% in pasture and idle land; good cover April to October with fair cover remainder of year; 24% in woods, good cover; 2% in bare gullies. Percentages of total area in various land use categories are based on the latest survey completed in 1964. 1/ About 12% of drainage area above small desilting and retention dams. 2/ Monthly precipitation Thiessen weighted from 5 rain gages. 3/ Precipitation and runoff records began Jan. 1957. 4/ Mean P based on 48-yr (1920-67) U. S. Weather Bureau record period at Holly Springs 2N, Miss.																
1967 DAILY PRECIPITATION (inches)						OXFORD, MISSISSIPPI						WATERSHED W-35		62.12		
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC				
1	.00	.00	.00	.00	1.32	.00	.49	.02	.00	.00	.24	.00				
2	.00	.37	.00	.00	.02	.00	.29	3.67	.00	.00	.00	1.27				
3	.00	.00	.00	.00	.00	.00	.00	.22	.00	.00	.19	.00				
4	.00	.00	.00	.00	.00	.00	.00	.47	.00	.00	.00	.00				
5	.00	.00	.47	.00	.00	.00	1.89	.00	.00	.00	.00	.00				
6	.00	.00	2.23	.00	3.99	.00	.03	.00	.00	.00	.00	.18				
7	.01	.00	.00	.00	.00	.00	.00	.04	.26	.00	.00	.00				
8	.00	.00	.00	.00	.00	.00	.00	.00	.43	.06	.00	.00				
9	.00	.00	.00	.00	.00	.00	3.17	.00	.00	.00	.00	1.29				
10	.00	.00	.00	.07	.00	.00	.00	.00	.00	.00	.00	.09				
11	.00	.00	.00	.00	.00	.00	.01	.00	.14	.00	.35	.39				
12	.00	.00	.00	.00	.00	.00	.02	.00	.00	.00	.00	.00				
13	.54	.00	.00	.51	.00	.00	.20	.00	.00	.00	.00	.00				
14	.08	.00	.00	.77	.34	.00	.00	.00	.00	.00	.00	.56				
15	.00	.04	.00	.00	.23	.00	.00	.00	.00	.26	.00	.19				
16	.00	.14	.00	.00	.00	.00	.00	.00	.00	1.19	.00	.00				
17	.00	.31	.00	.00	.00	.00	.00	.09	.00	.07	.00	.81				
18	.00	.00	.00	.00	.00	.00	.00	.24	.00	.00	.00	.00				
19	.00	.39	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00				
20	.00	.70	.18	.00	.57	.02	.00	.00	.00	.00	.05	1.27				
21	.00	.00	.00	.00	.83	.49	.00	.00	.34	.00	.30	.69				
22	.00	.00	.00	.12	.00	.24	.06	.00	.00	.00	.56	.00				
23	.00	.00	.00	.91	.00	.04	.00	.00	.00	.00	.04	.00				
24	.00	.00	.00	.00	.00	.00	.00	.01	.00	.05	.00	.00				
25	.00	.00	.00	.77	.00	.00	.01	.00	.00	.00	.00	.00				
26	.93	.00	1.24	.23	.00	.00	.29	.70	.00	.00	.00	.00				
27	.00	1.07	.30	.00	.00	.00	.00	.03	.23	.00	.00	.085				
28	.00	.00	.00	.00	.00	.02	.66	.00	.00	.00	.00	.00				
29	.00	.00	.00	.00	.00	.04	.59	.00	.00	.00	.56	.00				
30	.00	.00	.00	.48	.61	.41	.00	.00	.00	.27	.20	.13				
31	.00	.00	.00	.00	1.54	.00	.00	.00	.00	.11	.00	.28				
TOTAL	1.56	3.02	4.42	3.86	9.45	1.26	7.71	5.49	1.40	2.01	2.49	7.31				
STA A ^{1/}	3.58	5.05	4.86	4.58	4.78	2.93	4.31	3.33	4.77	1.97	4.05	5.11				
NOTES: FOR DAILY AIR TEMPERATURES IN THE VICINITY, SEE TABLE FOR WATERSHED W-4A, P. 62.1-1. DAILY PRECIPITATION VALUES THIENSEN WEIGHTED FROM RAIN GAGES 10, 11, 20, 21 AND 24. STATION AVERAGE IS FOR 11-YR (1957-67) RECORD PERIOD.																

Cooperative Research Project of USDA, University of Mississippi, and Mississippi State Agricultural Experiment Station

1967 MEAN DAILY DISCHARGE (cfs)						CAHON, MISSISSIPPI						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.00	.00	.05	.00	4.35	.21	.00	.00	.00	.00	.	.
2	.00	.00	.00	.00	11.17	.00	.00	47.11	.00	.00	.	.
3	.00	.00	.00	.00	.00	.00	.00	.	.00	.	.	.
4	.00	.00	.00	.00	.00	.00	.00	6.45	.00	.	.	.
5	.00	.00	.00	.00	.00	.00	41.42	.00	.00	.00	.	.
6	.00	.00	542.20	.00	675.33	.00	.32	.00	.00	.	.	.
7	.00	.00	11.93	.00	286.71	.00	.00	.00	.00	.	.	.
8	.00	.00	.03	.00	.35	.00	.00	.00	.00	.00	.	.
9	.00	.00	.00	.00	.00	.00	607.88	.	.	.	.00	.
10	.00	.00	.00	.00	.00	.00	.03	.	.00	.	.00	.
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.	.
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.	.
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.	.
14	.00	.00	.00	4.76	.00	.00	.00	.00	.00	.00	.	.
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.	.00	.
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.	.
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.	.
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.	.
20	.00	22.43	.00	.00	.00	.00	.00	.00	.00	.00	.00	158.4
21	.00	1.57	.00	.00	3.29	.00	.00	.00	.00	.00	.00	61.62
22	.00	.00	.00	.00	.30	.00	.00	.00	.00	.00	.00	6.34
23	.00	.00	.00	3.96	.00	.00	.00	.00	.00	.00	.	.
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.
25	.00	.00	.00	3.05	.00	.00	.00	.00	.00	.00	.	.
26	17.93	.00	7.76	15.02	.00	.00	.00	.00	.00	.00	.00	.00
27	2.14	33.43	19.07	.09	.00	.00	.00	.00	.00	.00	.	.
28	.00	7.24	.00	.00	.00	.00	.00	.00	.00	.00	.	.
29	.00	-----	.00	.00	.00	.00	2.18	.00	.00	.00	.00	.
30	.00	-----	.00	.00	2.28	.00	.00	.00	.00	.00	.00	.
31	.00	-----	.00	-----	151.95	.00	.00	.00	-----	.00	-----	.
MEAN	.65	2.31	17.74	.90	39.22	.01	21.03	16.45	.00	.00	.00	10.0
INCHES	.06	.20	1.83	.08	3.83	.00	2.05	1.51	.00	.00	.00	1.0

NOTES: TO CONVERT DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY 0.0031526. QUALITY OF RECORDS: FAIR, ESTIMATED TO BE WITHIN 15% OF ACTUAL.

1967 SELECTED RUNOFF EVENT						CAHON, MISSISSIPPI						
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF					
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)		
Event of May 31 - June 1, 1967 1/												
5-31	2.10	.000	5-31	5:45	.002	.002	5-31	1416	.00	.000		
				1400	.00	.00		1416	.00	.000		
				1415	.04	.16		1440	2.73	.000		
				1430	.24	.40		1500	90.32	.000		
				1445	.24	.64		1515	158.7	.000		
				1500	.00	.64		1530	.00	.0114		
				1515	.00	1.32		1545	1096.24	.000		
				1530	.00	1.32		1552	.00	.000		
				1545	.00	1.42		1600	.00	.000		
				1555	.00	1.42		1624	.00	.000		
								1640	.00	.000		
								1704	.00	.000		
								1720	.00	.000		
								1735	.00	.000		
								1750	.00	.000		
								1805	.00	.000		
								1820	.00	.000		
								1835	.00	.000		
								1850	.00	.000		
								1905	.00	.000		
								1920	.00	.000		
								1935	.00	.000		
								1950	.00	.000		
								2005	.00	.000		
								2020	.00	.000		
								2035	.00	.000		
								2050	.00	.000		
								2105	.00	.000		
								2120	.00	.000		
								2135	.00	.000		
								2150	.00	.000		
								2205	.00	.000		
								2220	.00	.000		
								2235	.00	.000		
								2250	.00	.000		
								2305	.00	.000		
								2320	.00	.000		
								2335	.00	.000		
								2350	.00	.000		
								2405	.00	.000		
								2420	.00	.000		
								2435	.00	.000		
								2450	.00	.000		
								2505	.00	.000		
								2520	.00	.000		
								2535	.00	.000		
								2550	.00	.000		
								2605	.00	.000		
								2620	.00	.000		
								2635	.00	.000		
								2650	.00	.000		
								2705	.00	.000		
								2720	.00	.000		
								2735	.00	.000		
								2750	.00	.000		
								2805	.00	.000		
								2820	.00	.000		
								2835	.00	.000		
								2850	.00	.000		
								2905	.00	.000		
								2920	.00	.000		
								2935	.00	.000		
								2950	.00	.000		
								3005	.00	.000		
								3020	.00	.000		
								3035	.00	.000		
								3050	.00	.000		
								3105	.00	.000		
								3120	.00	.000		
								3135	.00	.000		
								3150	.00	.000		
								3205	.00	.000		
								3220	.00	.000		
								3235	.00	.000		
								3250	.00	.000		
								3305	.00	.000		
								3320	.00	.000		
								3335	.00	.000		
								3350	.00	.000		
								3405	.00	.000		
								3420	.00	.000		
								3435	.00	.000		
								3450	.00	.000		
								3505	.00	.000		
								3520	.00	.000		
								3535	.00	.000		
								3550	.00	.000		
								3605	.00	.000		
								3620	.00	.000		
								3635	.00	.000		
								3650	.00	.000		
								3705	.00	.000		
								3720	.00	.000		
								3735	.00	.000		
								3750	.00	.000		
								3805	.00	.000		
								3820	.00	.000		
								3835	.00	.000		
								3850	.00	.000		
								3905	.00	.000		
								3920	.00	.000		
								3935	.00	.000		
								3950	.00	.000		
								4005	.00	.000		
								4020	.00	.000		
								4035	.00	.000		
								4050	.00	.000		



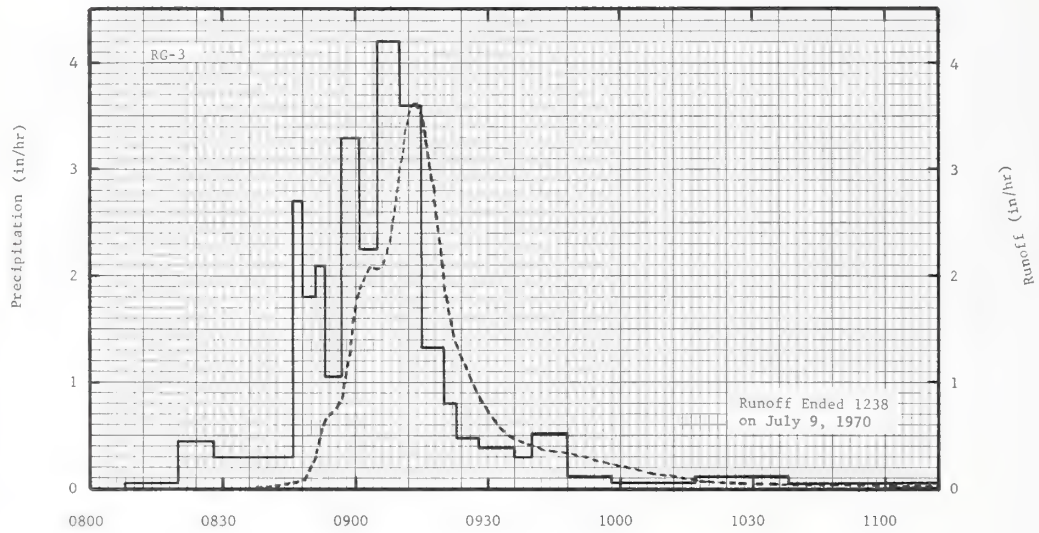
OXFORD, MISSISSIPPI WATERSHED W-35

MONTHLY PRECIPITATION AND RUNOFF (inches)							OXFORD, MISSISSIPPI WATERSHED WC-1 AREA--3.88 ACRES									
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	P ^{1/}	1.58	2.97	4.69	5.29	9.18	2.09	9.18	5.26	1.26	2.90	2.06	7.70	54.16		
	Q	.15	.28	2.65	1.72	5.22	.22	4.09	2.21	.00	.32	.13	3.47	20.46		
STA AV2/P (58-67) Q		3.34	4.85	5.36	4.58	4.80	3.25	4.44	4.32	3.42	2.10	3.46	5.19	49.11		
		1.23	1.85	2.54	1.16	1.64	.73	1.11	1.16	.68	.36	.78	1.93	15.17		
MEAN P ^{3/} 48 YR		5.67	5.27	5.93	5.06	4.66	3.76	4.40	3.27	3.45	2.88	4.51	5.13	53.99		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	8-3	4.60	7-9	1.36	7-9	1.49	7-9	2.04	3-5	2.19	3-5	2.65	3-5	2.65	4-30	4.17
MAXIMUMS FOR PERIOD OF RECORD ^{4/}																
19 58 to 19 67	6-10 1961	7.34	6-10 1961	1.94	6-10 1961	1.98	1-22 1962	2.45	1-22 1962	2.71	12-3 1964	2.93	3-28 1965	3.67 ^{5/}	3-24 1965	5.39 ^{5/}
NOTES: Watershed conditions: Watershed strip-cropped on the contour. 50% of area cultivated in corn on the contour with 0.2 to 0.4% row slope, high plant population, low crop yield, fair to good cover provided by vegetation except during planting and early growing season. 25% of area in second year alfalfa, fair cover. 25% of area in first year alfalfa, poor cover. 1/ Precipitation data from rain gage 3. 2/ Precipitation and runoff records began Jan. 1958. 3/ Mean P based on 48-yr (1920-67) U. S. Weather Bureau record period at Holly Springs 2N, Miss. 4/ Maximum discharge and volumes listed were, most likely, exceeded on March 28-29, 1965 when the stage recorder was inoperative. 5/ Estimated.																
1967 SELECTED RUNOFF EVENT							OXFORD, MISSISSIPPI				WATERSHED WC-1					
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
Event of July 9, 1967																
	RG	3	7-9	RG	3		7-9									
6-20	.15	.000		0808	.00	.00		0832	.000	.000						
6-21	1.08	.188		0820	.05	.01		0840	.023	.002						
6-22	.13	.000		0828	.45	.07		0843	.044	.003						
6-28	.05	.000		0838	.30	.12		0848	.082	.008						
6-29	.11	.000		0846	.30	.16		0851	.296	.018						
6-30	.57	.030		0848	2.70	.25		0853	.645	.034						
7-1	.10	.000		0851	1.80	.34		0857	.826	.083						
7-2	.70	.034		0853	2.10	.41		0900	1.744	.147						
7-5	1.80	.591		0857	1.05	.48		0903	2.085	.243						
7-6	.02	.015		0901	3.30	.70		0906	2.079	.347						
7-9	6/1.06	7/.533		0905	2.25	.85		0909	2.658	.465						
				0910	4.20	1.20		0911	3.283	.564						
				0915	3.60	1.50		0913	3.617	.679						
				0920	1.32	1.61		0915	3.518	.798						
				0923	.80	1.65		0918	2.760	.955						
				0928	.48	1.69		0921	1.747	1.068						
				0936	.38	1.74		0923	1.328	1.119						
				0940	.30	1.76		0925	1.132	1.160						
				0948	.52	1.83		0928	.870	1.210						
				0958	.12	1.85		0931	.667	1.249						
				1017	.06	1.87		0935	.495	1.287						
				1038	.11	1.91		0939	.419	1.318						
				1112	.05	1.94		0943	.359	1.344						
								0949	.338	1.379						
								0954	.280	1.404						
								1004	.178	1.442						
								1011	.118	1.460						
								1017	.079	1.469						
								1023	.056	1.476						
								1027	.050	1.480						
								1048	.033	1.494						
								1103	.020	1.501						
								1120	.011	1.505						
								1138	.006	1.508						
								1200	.005	1.510						
								1238	.000	1.511						
Watershed conditions: Watershed strip-cropped on the contour. 50% of area in corn 5-8 ft. high, 12,000 plants per acre, estimated 70% ground and canopy cover. Last tillage operation on June 7. 25% of area in second year alfalfa, fair cover; 25% of area in first year alfalfa, planted April 17, poor cover.																

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 3.912. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 62.16-4. 6/ RAINFALL FROM 0548 TO 0650. 7/ RUNOFF FROM 0616 TO 0750.

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 3.912. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 62.16-4. 6/ RAINFALL FROM 0548 TO 0650. 7/ RUNOFF FROM 0616 TO 0750.

Cooperative Research Project of USDA, University of Mississippi, and Mississippi State Agricultural Experiment Station

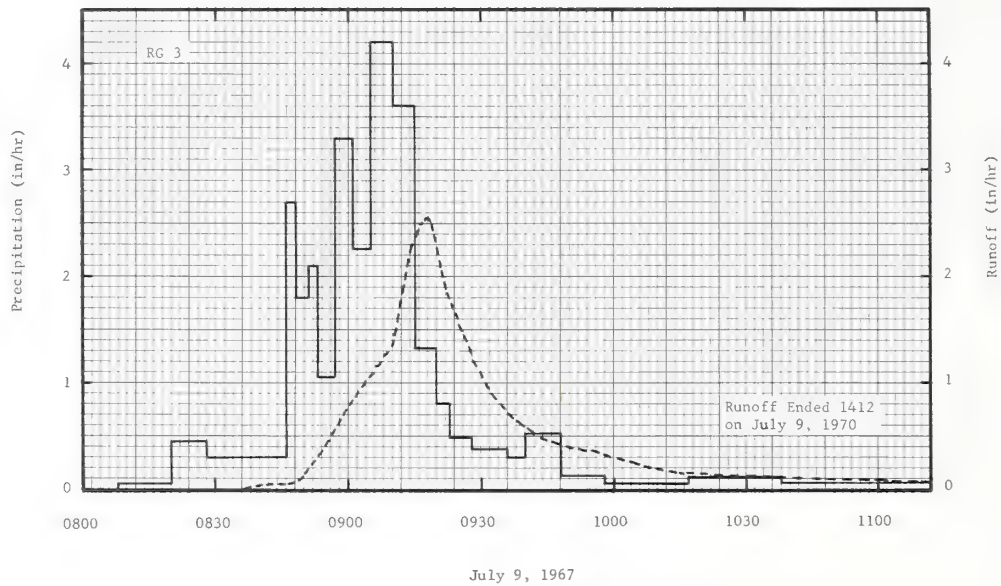


July 9, 1967

OXFORD, MISSISSIPPI WATERSHED WC-1

MONTHLY PRECIPITATION AND RUNOFF (inches)							OXFORD, MISSISSIPPI WATERSHED WC-2 AREA—1.45 ACRES									
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	P1/ O	1.58	2.97	4.69	5.29	9.18	2.09	9.18	5.26	1.26	2.90	2.06	7.70	54.16		
		.14	.37	2.83	1.70	5.32	.06	3.76	2.27	.00	.13	.09	3.73	20.40		
STA AV2/P (58-67) Q		3.34	4.85	5.36	4.58	4.80	3.25	4.44	4.32	3.42	2.10	3.46	5.19	49.11		
		1.37	2.39	2.79	1.11	1.69	.52	.84	.75	.41	.17	.57	2.05	14.66		
MEAN P3/ 48 YR		5.67	5.27	5.93	5.06	4.66	3.76	4.40	3.27	3.45	2.88	4.51	5.13	53.99		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	8-3	2.80	7-9	1.11	7-9	1.28	7-9	1.75	3-6	2.56	3-5	2.83	3-5	2.83	4-30	4.40
MAXIMUMS FOR PERIOD OF RECORD																
1958 TO 1967	3-28 1965	4.93	3-28 1965	1.57	3-28 1965	2.61	3-28 1965	2.82	3-28 1965	3.81	12-3 1964	4.40	12-3 1964	4.50	3-24 1965	7.35
NOTES Watershed conditions: 100% of area cultivated in corn, high plant population, low crop yield, fair to good cover provided by vegetation except during planting and early growing season. Terraced with rows on 0.2 to 0.4% slope. 1/ Precipitation data from rain gage 3. 2/ Precipitation records began Jan. 1958, runoff records began July 1958. 3/ Mean P based on 48-yr (1920-67) U. S. Weather Bureau record period at Holly Springs 2N, Miss.																
1967 SELECTED RUNOFF EVENT							OXFORD, MISSISSIPPI WATERSHED WC-2									
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in hr.)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
Event of July 9, 1967																
	RG 3		7-9	RG	3		7-9									
6-20	.15	.000		0808	.00	.00		0837	.000	.000						
6-21	1.08	.062		0820	.05	.01		0843	.049	.002						
6-22	.13	.000		0828	.45	.07		0849	.089	.009						
6-28	.05	.000		0838	.30	.12		0852	.244	.018						
6-29	.11	.000		0846	.30	.16		0855	.400	.034						
6-30	.57	.000		0848	2.70	.25		0858	.640	.060						
7-1	.10	.000		0851	1.80	.34		0906	1.122	.177						
7-2	.70	.000		0853	2.10	.41		0910	1.364	.260						
7-5	1.80	.463		0857	1.05	.48		0914	2.248	.380						
7-6	.02	.099		0901	3.30	.70		0916	2.463	.459						
7-9	4/1.06	5/.362		0905	2.25	.85		0918	2.550	.542						
				0910	4.20	1.20		0922	1.917	.691						
				0915	3.60	1.50		0926	1.493	.805						
				0920	1.32	1.61		0928	1.248	.851						
				0923	.80	1.65		0934	.820	.954						
				0928	.48	1.69		0944	.493	1.064						
				0936	.38	1.74		0955	.376	1.143						
				0940	.30	1.76		1007	.224	1.203						
				0948	.52	1.83		1014	.171	1.226						
				0958	.12	1.85		1022	.128	1.246						
				1017	.06	1.87		1037	.103	1.275						
				1038	.11	1.91		1102	.080	1.313						
				1112	.05	1.94		1142	.059	1.360						
								1150	.042	1.367						
								1300	.020	1.403						
								1412	.000	1.416						
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 1.462. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 62.16-4. 4/ RAINFALL FROM 0548 TO 0650. 5/ RUNOFF FROM 0614 TO 0830.																

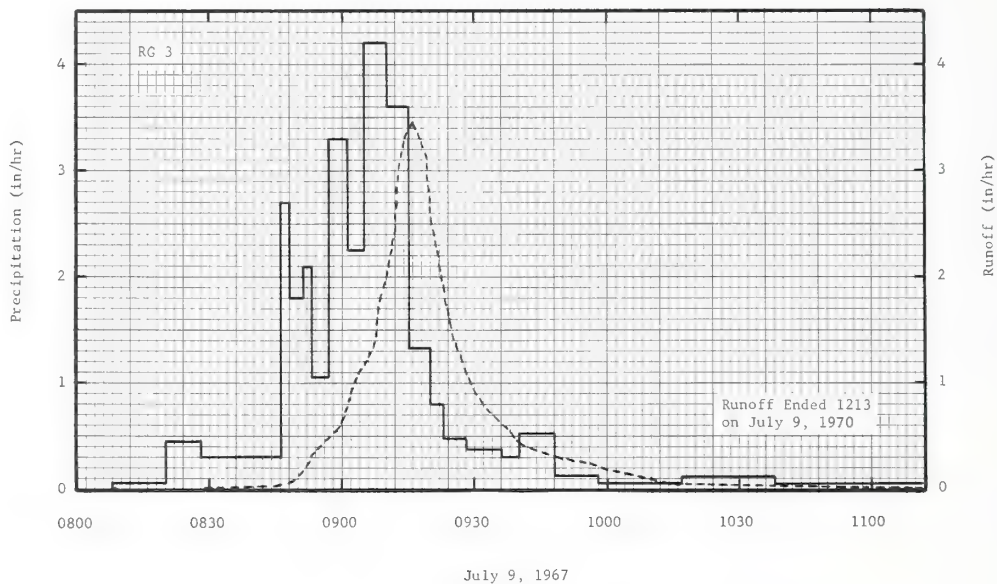
Cooperative Research Project of USDA, University of Mississippi, and Mississippi State Agricultural Experiment Station



OXFORD, MISSISSIPPI WATERSHED WC-2

MONTHLY PRECIPITATION AND RUNOFF (inches)							OXFORD, MISSISSIPPI WATERSHED WC-3 AREA—1.61 ACRES									
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	P 1/	1.58	2.97	4.69	5.29	9.18	2.09	9.18	5.26	1.26	2.90	2.06	7.70	54.16		
	Q	.04	.00	1.72	.75	3.71	.05	3.10	1.61	.00	.09	.02	1.98	13.07		
	STA AV2/P (58-67) Q	3.34	4.85	5.36	4.58	4.80	3.25	4.44	4.32	3.42	2.10	3.46	5.19	49.11		
MEAN 48 YR	P 3/															
		5.67	5.27	5.93	5.06	4.66	3.76	4.40	3.27	3.45	2.88	4.51	5.13	53.99		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	7-9	3.46	7-9	1.22	7-9	1.31	7-9	1.73	5-6	1.99	5-6	2.14	5-6	2.14	4-30	3.15
MAXIMUMS FOR PERIOD OF RECORD																
1958 TO 1967	3-28 1965	6.48	3-28 1965	1.92	3-28 1965	3.14	3-28 1965	3.23	3-28 1965	4.25	3-28 1965	4.71	3-28 1965	4.71	3-24 1965	7.55
NOTES: Watershed conditions: 100% of area cultivated in corn, high plant population, low crop yield, fair to good cover provided by vegetation except during planting and early growing seasons. Contour cultivation 0.2 to 0.4% row slope. 1/ Precipitation data from rain gage 3. 2/ Precipitation records began Jan. 1958, runoff records began July 1958. 3/ Mean P based on 48-yr (1920-67) U. S. Weather Bureau record period at Holly Springs 2N, Miss.																
1967 SELECTED RUNOFF EVENT							OXFORD, MISSISSIPPI WATERSHED WC-3									
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
	RG 3		7-9	RG	3		7-9									
6-20	.15	.000		0808	.00	.00		0829	.000	.000						
6-21	1.08	.046		0820	.05	.01		0838	.007	.001						
6-22	.13	.000		0828	.45	.07		0842	.016	.001						
6-28	.05	.000		0838	.30	.12		0845	.024	.002						
6-29	.11	.000		0846	.30	.16		0848	.054	.004						
6-30	.57	.000		0848	2.70	.25		0851	.149	.009						
7-1	.10	.000		0851	1.80	.34		0853	.304	.017						
7-2	.70	.000		0853	2.10	.41		0855	.407	.029						
7-5	1.80	.336		0857	1.05	.48		0859	.548	.061						
7-6	.02	.011		0901	3.30	.70		0901	.756	.082						
7-9	4/ 1.06	5/ .413		0905	2.25	.85		0903	1.035	.112						
				0910	4.20	1.20		0907	1.322	.191						
				0915	3.60	1.50		0909	1.870	.244						
				0920	1.32	1.61		0912	2.415	.351						
				0923	.80	1.65		0913	3.105	.397						
				0928	.48	1.69		0915	3.419	.506						
				0936	.38	1.74		0916	3.460	.563						
				0940	.30	1.76		0919	3.111	.727						
				0948	.52	1.83		0920	2.560	.775						
				0958	.12	1.85		0922	2.158	.853						
				1017	.06	1.87		0924	1.657	.917						
				1038	.11	1.91		0927	1.273	.990						
				1112	.05	1.94		0929	1.010	1.028						
								0933	.756	1.087						
								0938	.560	1.142						
								0940	.431	1.158						
								0943	.388	1.179						
								0954	.271	1.239						
								1004	.153	1.274						
								1008	.106	1.283						
								1017	.055	1.295						
								1026	.036	1.302						
								1036	.036	1.308						
								1040	.018	1.310						
								1048	.018	1.312						
								1106	.008	1.316						
								1114	.005	1.317						
								1146	.003	1.319						
								1202	.003	1.320						
								1213	.000	1.320						
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 1.623. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 62.16-4. 4/ RAINFALL FROM 0548 TO 0650. 5/ RUNOFF FROM 0609 TO 0746.																

Cooperative Research Project of USDA, University of Mississippi, and Mississippi State Agricultural Experiment Station



OXFORD, MISSISSIPPI WATERSHED WC-3

MONTHLY PRECIPITATION AND RUNOFF (inches)						OXFORD, MISSISSIPPI WATERSHED W-17A ^{1/} AREA—3,200 ACRES (5.00 SQ. MILES)								62.17		
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967 P 2/ Q	1.56 .04	3.01 .09	4.56 1.92	5.34 .41	8.38 2.67	1.93 .00	10.10 4.13	6.53 2.63	1.07 .00	2.54 .00	1.66 .00	8.67 1.79	55.35 13.68			
STA AV3/P (58-67) Q	3.19 .62	4.67 1.31	4.92 1.46	4.63 .72	3.99 .61	2.70 .06	4.80 .41	4.56 .42	3.71 .40	1.91 .05	3.14 .07	5.21 .85	47.43 6.98			
MEAN P 4/ 48 YR	5.67	5.27	5.93	5.06	4.66	3.76	4.40	3.27	3.45	2.88	4.51	5.13	53.99			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	7-9	.49	7-9	.49	7-9	.96	7-9	2.57	7-9	3.51	7-9	3.65	7-9	3.66	7-7	3.95
MAXIMUMS FOR PERIOD OF RECORD 5/																
19 61 TO 19 66	7-9 1967	.49	7-9 1967	.49	7-9 1967	.96	7-9 1967	2.57	7-9 1967	3.51	7-9 1967	3.65	7-9 1967	3.66	2-23 1962	4.15
NOTES: Watershed conditions: About 15% of area in cultivation (cotton and corn), fair cover November to March, poor cover April and May improving to good by mid-July; 22% in pasture and idle land, good cover April to October with fair cover remainder of year; 62% in woods, good cover; 1% in bare gullies. Percentages of total area in various land use categories are based on the latest survey completed in 1965. 1/ About 25% of drainage area above small desilting and retention dams. 2/ Monthly precipitation Thiessen weighted from rain gages 2, 17, 22, and 28. 3/ Precipitation and runoff records began Jan. 1957. Runoff for 1957 was estimated, therefore was not included in the station averages. 4/ Mean P based on 48-yr (1920-67) U. S. Weather Bureau record period at Holly Springs 2N, Miss. 5/ Maximum discharges and volumes were not computed prior to 1961; poor records 1958-60.																
1967 DAILY PRECIPITATION (inches)						OXFORD, MISSISSIPPI WATERSHED W-17A 62.17										
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC				
1	.00	.00	.00	.00	1.39	.00	.04	.18	.00	.00	.16	.00				
2	.00	.69	.00	.00	.03	.00	.73	3.70	.00	.00	.01	2.28				
3	.00	.00	.00	.00	.00	.00	.00	.90	.00	.00	.20	.00				
4	.00	.00	.00	.00	.00	.00	.00	.35	.00	.00	.00	.00				
5	.00	.00	.59	.00	.00	.00	1.71	.00	.00	.00	.00	.00				
6	.00	.00	2.70	.00	3.38	.00	.00	.00	.00	.00	.00	.10				
7	.00	.00	.00	.00	.00	.00	.00	.36	.15	.00	.00	.00				
8	.00	.00	.00	.00	.00	.00	.00	.00	.53	.09	.00	.00				
9	.00	.00	.00	.00	.00	.00	4.14	.10	.00	.00	.00	1.18				
10	.00	.00	.00	.11	.00	.00	.00	.00	.00	.00	.00	.09				
11	.00	.00	.00	.00	.00	.00	.08	.00	.03	.00	.29	.42				
12	.00	.00	.00	.00	.00	.00	.76	.00	.00	.00	.00	.00				
13	.56	.00	.00	.52	.00	.00	.58	.00	.00	.00	.00	.00				
14	.07	.00	.00	.75	.50	.00	.00	.00	.00	.00	.00	.59				
15	.00	.01	.00	.00	.27	.00	.00	.00	.00	.00	.00	.24				
16	.00	.10	.00	.00	.00	.00	.00	.00	.00	1.37	.00	.00				
17	.00	.25	.00	.00	.00	.00	.00	.00	.00	.10	.00	.80				
18	.00	.00	.00	.00	.00	.04	.00	.38	.00	.00	.00	.00				
19	.00	.27	.02	.00	.00	.00	.00	.00	.00	.00	.00	.00				
20	.00	.68	.12	.00	.26	.17	.08	.00	.00	.00	.04	1.68				
21	.00	.00	.00	.13	.79	.50	.00	.00	.00	.00	.17	.65				
22	.00	.00	.00	.10	.00	.27	.32	.00	.00	.00	.04	.00				
23	.00	.00	.00	1.72	.00	.00	.00	.00	.00	.00	.03	.00				
24	.00	.00	.00	.00	.00	.00	.00	.38	.00	.63	.00	.00				
25	.00	.00	.00	.69	.00	.00	.24	.00	.00	.00	.00	.00				
26	.93	.00	1.00	.73	.00	.11	.29	.10	.00	.00	.00	.00				
27	.00	1.01	.13	.00	.00	.00	.00	.08	.36	.00	.00	.035				
28	.00	.00	.00	.00	.00	.02	.39	.00	.00	.00	.00	.00				
29	.00	.00	.00	.00	.00	.03	.74	.00	.00	.00	.50	.00				
30	.00	.00	.00	.59	.42	.79	.00	.00	.00	.26	.22	.12				
31	.00	.00	.00	.00	1.34	.00	.00	.00	.00	.09	.00	.46				
TOTAL	1.56	3.01	4.56	5.34	8.38	1.93	10.10	6.53	1.07	2.54	1.66	8.67				
STA AV	3.19	4.67	4.92	4.63	3.99	2.70	4.80	4.56	3.71	1.91	3.14	5.21				
NOTES: FOR DAILY AIR TEMPERATURES IN THE VICINITY, SEE TABLE FOR WATERSHED W-4A, P. 62.1-1. DAILY PRECIPITATION VALUES THIESSEN WEIGHTED FROM RAIN GAGES 2, 17, 22 AND 28. STATION AVERAGE IS FOR 10-YR (1958-67) RECORD PERIOD.																

Cooperative Research Project of USDA, University of Mississippi, and Mississippi State Agricultural Experiment Station

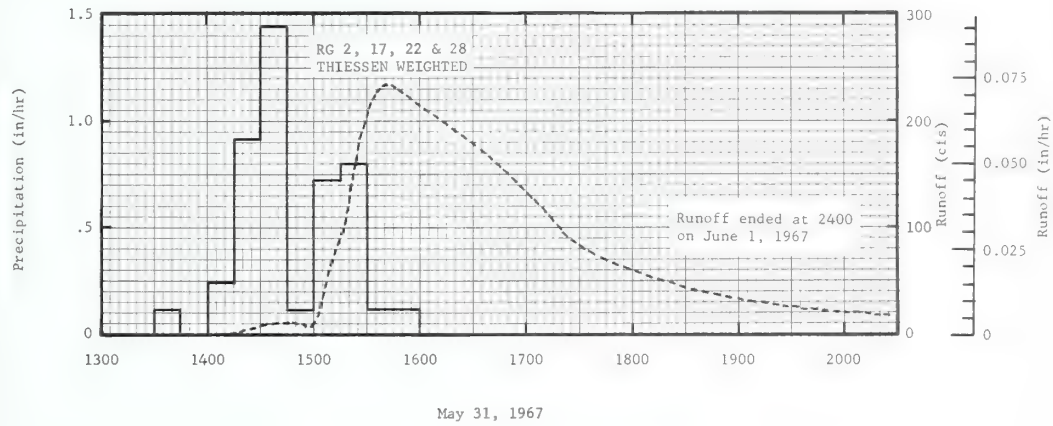
1967 MEAN DAILY DISCHARGE (cfs)						OXFORD, MISSISSIPPI			WATERSHED R-17A 62.17			
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.16	.07	.34	.00	51.75	.42	.00	.00	.00	.00	.00	.00
2	.12	4.34	.15	.00	2.98	.00	1.29	263.59	.00	.00	.00	108.55
3	.10	.20	.12	.00	.09	.00	.00	4.40	.00	.00	.00	1.76
4	.09	.09	.11	.00	.03	.00	.00	81.89	.00	.00	.00	.10
5	.09	.08	.17	.00	.00	.00	4.16	2.14	.00	.00	.00	.04
6	.09	.04	250.81	.00	211.41	.06	.59	.72	.00	.00	.00	.00
7	.09	.00	4.23	.00	68.84	.00	.00	.09	.00	.00	.00	.00
8	.09	.00	.14	.06	.83	.00	.00	.00	.00	.00	.00	.00
9	.09	.00	.10	.03	.13	.00	483.26	.04	.00	.00	.00	2.63
10	.09	.00	.10	.03	.08	.00	8.42	.03	.00	.00	.00	1.98
11	.09	.00	.10	.00	.08	.00	.09	.00	.00	.00	.00	.03
12	.09	.00	.10	.00	.04	.00	.04	.00	.00	.00	.00	.03
13	.09	.00	.10	.00	.00	.00	35.29	.00	.00	.00	.00	.00
14	.09	.00	.10	.27	.10	.00	4.50	.00	.00	.00	.00	.04
15	.09	.00	.10	.08	.25	.00	.04	.00	.00	.00	.00	.08
16	.09	.00	.10	.04	.00	.00	.00	.00	.00	.00	.00	.04
17	.09	.00	.10	.00	.00	.00	.00	.00	.00	.00	.00	5.89
18	.09	.00	.10	.00	.00	.00	.00	.00	.00	.00	.00	.30
19	.09	.05	.10	.03	.00	.00	.00	.00	.00	.00	.00	.00
20	.09	1.11	.10	.03	.00	.00	.00	.00	.00	.00	.00	92.55
21	.09	.26	.10	.00	.00	.00	.00	.00	.00	.00	.00	24.79
22	.09	.11	.10	.00	.00	.00	.00	.00	.00	.00	.00	1.44
23	.09	.10	.10	23.71	.00	.00	.00	.00	.00	.00	.00	.11
24	.09	.09	.10	.17	.00	.00	.00	.00	.00	.05	.00	.09
25	.09	.09	.09	.33	.00	.00	.00	.00	.00	.00	.00	.09
26	1.93	.09	.08	29.06	.00	.00	.00	1.05	.00	.00	.00	.07
27	.63	4.63	.08	.59	.00	.00	.00	.00	.00	.00	.00	.03
28	.00	1.41	.07	.10	.00	.00	.02	.00	.00	.00	.00	.00
29	.04	-----	.07	.10	.00	.00	16.47	.00	.00	.00	.00	.00
30	.08	-----	.08	.10	.00	.00	.77	.00	.00	.00	.00	.00
31	.07	-----	.08	-----	22.70	-----	.00	.00	-----	.00	-----	.05
MEAN	.16	.45	8.33	1.82	11.59	.01	17.90	11.42	.00	.00	.00	7.76
INCHES	.04	.09	1.92	.41	2.67	.00	4.13	2.63	.00	.00	.00	1.79

NOTES: TO CONVERT DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY 0.0074380. QUALITY OF RECORDS: POOR, ESTIMATED TO BE WITHIN 20% OF ACTUAL.

1967 SELECTED RUNOFF EVENT						OXFORD, MISSISSIPPI		WATERSHED R-17A 62.17			
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)	
Event of May 31 - June 1, 1967 1/											
5-31	2/.16	.0000	5-31	4:00	AVG 3/	.00	5-31	14:00	.0000	.0000	
				14:30	.00	.00		14:15	.18	.0000	
				14:45	.12	.03		14:30	.20	.0000	
				14:00	.00	.03		14:45	11.20	.0012	
				14:15	.20	.09		14:58	7.00	.0017	
				14:30	.02	.32		15:00	65.27	.0020	
				14:45	1.64	.00		15:15	105.82	.0000	
				15:00	.12	.71		15:26	122.7	.0022	
				15:15	.72	.00		15:42	250.00	.0307	
				15:30	.30	1.09		15:55	217.00	.0484	
				15:45	.12	1.12		16:00	180.00	.0400	
				16:00	.12	1.15		17:12	114.35	.0142	
								17:20	71.00	.0077	
								17:40	50.00	.0077	
								17:50	22.00	.0077	
								18:00	13.25	.0077	
								18:30	.00	.0077	
								18:40	2.00	.0077	
							6-1	07:50	.00	.1717	
								18:00	.00	.1720	

Watershed conditions: 15% of are in cultivation, chiefly cotton and corn, generally poor cover; 10% in pasture and 12% idle, fair to good cover; 62% in woods, good cover; 1% in bare gullies.

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.0003099. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 62.5-5. 1/ ISOHYETAL MAP ON P. 62.11-4. 2/ RAINFALL PRIOR TO 1330 ON 5-31-67. FOR 30-DAY ANTECEDENT P AND Q, SEE TABLES ON THIS AND PREVIOUS PAGE. 3/ THEISSEN WEIGHTED STORM RAINFALL, RAIN GAGES 2, 17, 22 AND 28. DAILY TOTALS FOR INDIVIDUAL RAIN GAGES LISTED ON PP. 62.11-2 AND 62.11-3.



OXFORD, MISSISSIPPI WATERSHED W-17A

MONTHLY PRECIPITATION AND RUNOFF (inches)						OXFORD, MISSISSIPPI AREA—1,090 ACRES (1.70 SQ. MILES)						WATERSHED W-35A ^{1/} 62.18				
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967 P ₂ Q	1.63 .28	2.95 .56	4.63 2.00	4.24 .34	8.94 4.00	1.40 .03	8.59 3.57	5.41 2.97	1.30 .00	2.22 .00	2.33 .00	7.39 2.27	51.03 16.02			
STA AV ₃ /P (58-67) Q	3.17 1.02	4.85 1.90	5.04 2.19	4.34 1.03	4.36 1.08	2.62 .13	4.55 .59	3.47 .50	4.22 .38	1.82 .05	3.52 .32	5.14 1.45	47.10 10.64			
MEAN P ₄ 48 YR	5.67	5.27	5.93	5.06	4.66	3.76	4.40	3.27	3.45	2.88	4.51	5.13	53.99			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	7-9	1.30	7-9	1.27	7-9	2.39	7-9	3.24	7-9	3.28	7-9	3.31	7-8	3.32	7-5	3.54
MAXIMUMS FOR PERIOD OF RECORD ^{5/}																
19 61 TO 19 67	7-9 1967	1.30	7-9 1967	1.27	7-9 1967	2.39	7-9 1967	3.24	7-9 1967	3.28	7-9 1967	3.31	7-8 1967	3.32	3-24 1965	5.12
NOTES: Watershed conditions: About 19% in cultivation (cotton and corn), fair cover November to March, poor cover April and May improving to good by mid-July; 58% in pasture and idle land, good cover April to October with fair cover remainder of year; 22% in woods, good cover; 1% in bare gullies. Percentages of total area in various land use categories are based on the latest survey completed in 1964. ^{1/} About 9% of drainage area above small desilting and retention dams. ^{2/} Monthly precipitation Thiessen weighted from rain gages 3, 11, 24 and 26. ^{3/} Precipitation and runoff records began Jan. 1957. Runoff for 1957 was estimated, therefore was not included in the station averages. ^{4/} Mean P based on 48-yr (1920-67) U.S. Weather Bureau record period at Holly Springs 2N, Miss. ^{5/} Maximum discharges and volumes were not computed prior to 1961; poor records 1957-60.																
1967 DAILY PRECIPITATION (inches)						OXFORD, MISSISSIPPI WATERSHED W-35A								62.18		
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC				
1	.00	.00	.00	.00	1.05	.00	.49	.00	.00	.00	.25	.00				
2	.00	.35	.00	.00	.03	.00	.56	3.89	.00	.00	.00	1.23				
3	.00	.00	.00	.00	.00	.00	.00	.07	.00	.00	.19	.00				
4	.00	.00	.00	.00	.00	.00	.00	.44	.00	.00	.00	.00				
5	.00	.00	.60	.00	.00	.00	1.95	.00	.00	.00	.00	.00				
6	.00	.00	2.28	.00	3.82	.00	.02	.00	.00	.00	.00	.15				
7	.00	.00	.00	.00	.00	.00	.00	.05	.28	.00	.00	.00				
8	.00	.00	.00	.00	.00	.00	.00	.00	.33	.06	.00	.00				
9	.00	.00	.00	.00	.00	.00	3.65	.00	.00	.00	.00	1.23				
10	.00	.00	.00	.07	.00	.00	.00	.00	.00	.00	.00	.08				
11	.00	.00	.00	.00	.00	.00	.00	.00	.15	.00	.31	.39				
12	.00	.00	.00	.00	.00	.00	.02	.00	.00	.00	.00	.00				
13	.54	.00	.00	.53	.00	.00	.24	.00	.00	.00	.00	.00				
14	.07	.00	.00	.87	.42	.00	.00	.00	.00	.00	.00	.52				
15	.00	.02	.00	.00	.25	.00	.00	.00	.00	.00	.00	.20				
16	.00	.16	.00	.00	.00	.00	.00	.00	.00	1.52	.00	.00				
17	.00	.30	.00	.00	.00	.00	.00	.04	.00	.09	.00	.81				
18	.00	.00	.00	.00	.00	.00	.00	.40	.00	.00	.00	.00				
19	.00	.39	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00				
20	.00	.68	.16	.00	.49	.02	.00	.01	.00	.00	.04	1.58				
21	.00	.00	.00	.07	.86	.48	.00	.00	.31	.00	.28	.60				
22	.00	.00	.00	.16	.00	.22	.11	.00	.00	.00	.46	.00				
23	.00	.00	.00	.97	.00	.02	.00	.00	.00	.00	.04	.00				
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.12	.00	.00				
25	.00	.00	.00	.80	.00	.00	.00	.02	.00	.00	.00	.00				
26	1.02	.00	1.35	.26	.00	.00	.27	.46	.00	.00	.00	.00				
27	.00	1.05	.23	.00	.00	.00	.00	.03	.23	.00	.00	.065				
28	.00	.00	.00	.00	.00	.04	.73	.00	.00	.00	.00	.00				
29	.00	.00	.00	.00	.00	.05	.55	.00	.00	.00	.58	.00				
30	.00	.00	.00	.51	.69	.57	.00	.00	.00	.32	.18	.13				
31	.00	.00	.00	.00	1.33	.00	.00	.00	.00	.11	.00	.41				
TOTAL	1.63	2.95	4.63	4.24	8.94	1.40	8.59	5.41	1.30	2.22	2.33	7.39				
STA AV	3.17	4.85	5.04	4.34	4.36	2.61	4.55	3.47	4.22	1.82	3.52	5.14				
NOTES: FOR DAILY AIR TEMPERATURES IN THE VICINITY, SEE TABLE FOR WATERSHED W-4A, P. 62.1-1. DAILY PRECIPITATION VALUES THIESSEN WEIGHTED FROM RAIN GAGES 3, 11, 24 AND 26. STATION AVERAGE IS FOR 10-YR (1958-67) RECORD PERIOD.																

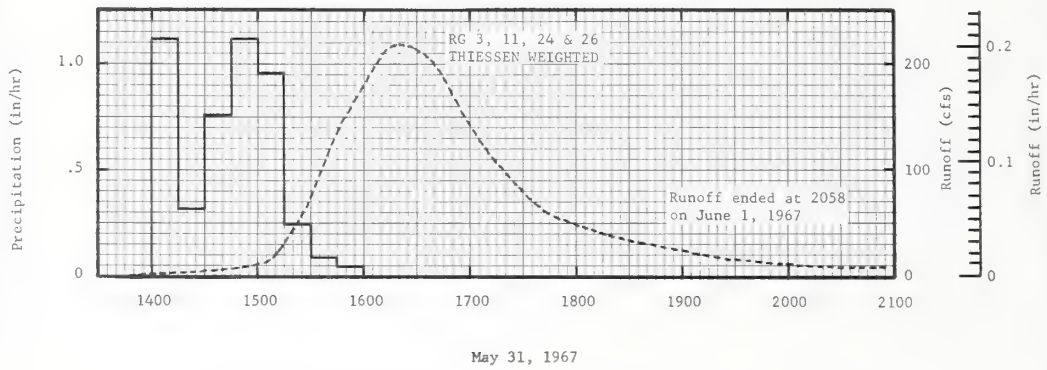
Cooperative Research Project of USDA, University of Mississippi, and Mississippi State Agricultural Experiment Station

1967					MEAN DAILY DISCHARGE (cfs)					OXFORD, MISSISSIPPI					JAN - FEB - MAR - APR - MAY - JUNE - JULY - AUG - SEPT - OCT - NOV - DEC				
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC							
1	.46	.00	.83	.00	10.58	1.32	.00	.00	.00	.00	.00	.00							
2	.00	1.02	.26	.00	2.55	.00	.25	151.11	.00	.00	.00	.00							
3	.00	.57	.00	.00	.35	.00	.00	1.71	.00	.00	.00	.00							
4	.00	.00	.00	.00	.00	.00	.00	2.51	.00	.00	.00	.00							
5	.00	.00	.36	.00	.00	.00	.00	.00	.00	.00	.00	.00							
6	.00	.00	75.66	.00	105.66	.00	1.15	.00	.00	.00	.00	.00							
7	.00	.00	2.91	.00	37.43	.00	.00	.00	.00	.00	.00	.00							
8	.00	.00	1.37	.00	1.62	.00	.00	.00	.00	.00	.00	.00							
9	.00	.00	1.14	.00	.92	.00	150.78	.00	.00	.00	.00	.00							
10	.00	.00	.50	.00	.45	.00	1.52	.00	.00	.00	.00	.00							
11	.00	.00	.04	.00	.10	.00	.00	.00	.00	.00	.00	.00							
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00							
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00							
14	1.16	.00	.00	2.63	.03	.00	.00	.00	.00	.00	.00	.00				1.24			
15	.26	.00	.00	.00	.77	.00	.00	.00	.00	.00	.00	.00				.31			
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00				.61			
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00				1.51			
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00				.31			
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00				.00			
20	.00	8.84	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00				2.00			
21	.00	2.14	.00	.00	1.67	.00	.00	.00	.00	.00	.00	.00				11.70			
22	.00	.67	.00	.00	1.04	.00	.00	.00	.00	.00	.00	.00				2.62			
23	.00	.10	.00	4.33	.00	.00	.00	.00	.00	.00	.00	.00				1.14			
24	.00	.00	.00	.68	.00	.00	.00	.00	.00	.00	.00	.00				.11			
25	.00	.00	.00	.60	.00	.00	.00	.00	.00	.00	.00	.00				.35			
26	8.41	.00	2.47	6.74	.00	.00	.00	.00	.00	.00	.00	.00				.00			
27	1.87	9.79	4.89	.68	.00	.00	.00	.00	.00	.00	.00	.00				.00			
28	.46	2.56	.64	.00	.00	.00	.10	.00	.00	.00	.00	.00				.00			
29	.00	---	.25	.00	.00	.00	.00	.00	.00	.00	.00	.00				.00			
30	.00	---	.09	.00	.00	.00	.11	.00	.00	.00	.00	.00				.00			
31	.00	---	.00	---	18.96	---	.00	.00	---	.00	---	.00				.00			
MEAN	.62	.62	2.95	.52	5.92	.04	5.32	6.43	.66	.66	.66	.66				.66			
INCHES	.28	.56	2.00	.34	4.06	.02	2.57	2.87	.60	.60	.60	.60				2.27			

NOTES: TO CONVERT DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY 0.0218365. QUALITY OF RECORDS: FAIR, ESTIMATED TO BE WITHIN 15% OF ACTUAL.

1967			SELECTED RUNOFF EVENT				OXFORD, MISSISSIPPI				JAN - FEB - MAR - APR - MAY - JUNE - JULY - AUG - SEPT - OCT - NOV - DEC				
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF								
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)		DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)
Event of May 31 - June 1, 1967 1/															
5-31	2.16	.0000	5-31	4:00	4.00	.00	5-31	1:40	.00	.0000					
				1400	.00	.00		1406	.00	.0004					
				1415	1.12	.28		1426	3.15	.0012					
				1430	.32	.36		1506	14.56	.0065					
				1445	.76	.55		1530	74.88	.0027					
				1500	1.12	.85		1540	140.66	.0486					
				1515	.96	1.07		1550	175.41	.0776					
				1530	.24	1.13		1600	18.00	.0010					
				1545	.00	1.15		1610	18.00	.0010					
				1600	.04	1.16		1615	118.47	.0010					
Watershed conditions: 19% of area in cultivation, chiefly cotton and corn, generally poor cover; 48% in pasture and 10% idle, fair to good cover; 22% in woods, good cover; 1% in bare gullies.															
								1700	12.77	.0004					
								1830	34.16	.0010					
								1900	18.00	.0010					
								2025	6.06	.0004					
								2100	4.03	.0010					
								2400	3.73	.0010					
								1156	.00	.0000					
								2028	.00	.0000					

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.0009099. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 62.12-5. 1/ ISOHYETAL MAP ON P. 62.11-4. 2/ RAINFALL PRIOR TO 1400 ON 5-31-67. FOR 30-DAY ANTECEDENT P AND Q, SEE TABLES ON THIS AND PREVIOUS PAGE. 3/ THIESSEN WEIGHTED SOTRM RAINFALL, RAIN GAGES 3, 11, 24 AND 26. DAILY TOTALS FOR INDIVIDUAL RAIN GAGES LISTED ON PP. 62.11-2 AND 62.11-3.



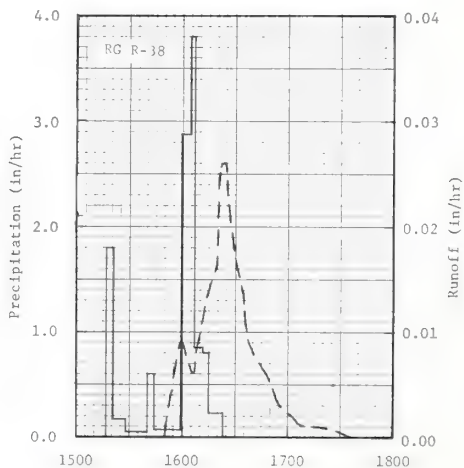
OXFORD, MISSISSIPPI WATERSHED W-35A

REEVALUATION OF PREVIOUSLY PUBLISHED MONTHLY PRECIPITATION AND RUNOFF (inches) 1/							TOMBSTONE, ARIZONA WATERSHED 63.003 AREA—2220 ACRES (3.47 SQ. MI.)							63.03
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1954	P	NR	NR	NR	NR	NR	NR	1.82	4.57	.45	.28	.00	.00	PARTIAL
	Q	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1955	P	.73	.09	.39	.00	.00	.40	11.00	3.69	.45	.11	.00	.08	16.94
	Q	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1956	P	.60	.14	.00	.22	.00	.39	4.16	1.11	.00	.29	.08	.11	7.10
	Q	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1957	P	1.34	.03	1.06	.05	.33	.45	1.66	3.94	.00	1.06	.05	.31	10.28
	Q	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1958	P	.00	1.07	1.79	.83	.01	.20	1.10	6.14	1.68	.87	.33	.00	14.02
	Q	.00	.00	.00	.00	.00	.00	.00	.65	T	.00	.00	.00	.65
1959	P	.00	.48	.00	.14	.00	.80	3.04	3.86	.72	.91	1.24	.88	12.07
	Q	.00	.00	.00	.00	.00	.00	.03	.05	T	.00	.00	.00	.08
1960	P	1.39	.46	.39	.00	.00	.00	2.35	1.59	.94	.40	.00	.18	7.70
	Q	.00	.00	.00	.00	.00	.00	.00	T	T	.00	.00	.00	T
1961	P	.39	.11	.01	.00	.00	.69	2.30	3.71	.73	1.87	.50	1.00	11.31
	Q	.00	.00	.00	.00	.00	.01	.04	.32	.00	.00	.00	.00	.37
1962	P	1.24	.03	.62	.00	.00	.03	4.65	.37	1.86	.19	.62	.76	10.37
	Q	.00	.00	.00	.00	.00	.00	.08	.00	T	.00	.00	.00	.08
1963	P	.18	.27	.05	.12	.00	.00	1.99	3.25	1.08	.26	1.36	.28	8.84
	Q	.00	.00	.00	.00	.00	.00	T	.04	.01	.00	.00	.00	.05
1964	P	.20	.01	.43	.31	.00	.02	4.37	2.36	3.55	.51	.84	.16	12.76
	Q	.00	.00	.00	.00	.00	.00	.10	.05	.24	.00	.00	.00	.39
1965	P	.71	.07	.25	.00	.11	.17	3.55	1.54	1.69	.00	.25	3.42	11.76
	Q	.00	.00	.00	.00	.00	.00	T	.01	.03	.00	.00	.00	.04
1966	P	.72	1.02	.01	.08	.00	.02	4.57	4.62	1.93	.02	.37	.15	13.51
	Q	.00	.00	.00	.00	.00	.00	.02	.01	T	.00	.00	.00	.03
1967	P	.00	.31	.00	.21	.52	.40	3.16	1.74	2.62	.18	.08	3.14	12.36
	Q	.00	.00	.00	.00	.00	.00	T	T	.03	.00	.00	.00	.03
STA AV2/P		.58	.31	.38	.15	.07	.27	3.68	2.92	1.33	.51	.44	.81	11.48
(54-67) Q		.00	.00	.00	.00	.00	.00	.03	.11	.03	.00	.00	.00	.17
MEAN P 3/		.83	.77	.61	.28	.18	.49	3.64	3.49	1.52	.66	.63	.89	13.99
71 YR														
REEVALUATION OF PREVIOUSLY PUBLISHED ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS 1/														
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL											
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1954		NR												
1955		NR												
1956		NR												
1957		NR												
1958	8-16	.56E	8-16	.20E	8-16	.22	8-16	.24E	8-16	.24E	8-16	.24E	8-16	.24E
1959	8-17	.09	8-17	.029	8-17	.03	8-17	.03	8-17	.03	8-17	.03	8-17	.03
1960	8-20	.01	8-20	.005	8-20	.005	8-20	.005	8-20	.005	8-20	.005	8-20	.005
1961	8-17	.35	8-17	.24	8-17	.28	8-17	.28	8-17	.28	8-17	.28	8-17	.28
1962	7-25	.05	7-25	.02	7-25	.03	7-25	.03	7-25	.03	7-25	.03	7-25	.03
1963	8-22	.04	8-22	.02	8-22	.02	8-22	.02	8-22	.02	8-22	.02	8-22	.02
1964	9-9	.19	9-9	.12	9-9	.18	9-9	.24	9-9	.24	9-9	.24	9-9	.25
1965	9-4	.06	9-4	.02	9-4	.03	9-4	.03	9-4	.03	9-4	.03	9-4	.03
1966	7-29	.05	7-29	.015	7-29	.018	7-29	.018	7-29	.018	7-29	.018	7-29	.018
1967	9-10	.03	9-10	.011	9-10	.012	9-10	.012	9-10	.012	9-10	.012	9-10	.015
MAXIMUMS FOR PERIOD OF RECORD 1/														
1954 TO 1967	8-16 1958	.56E	8-17 1961	.24	8-17 1961	.28	8-17 1961	.28	8-17 1961	.28	8-17 1961	.28	8-17 1961	.28
													8-14 1958	.42E
Notes: Watershed conditions: Includes subwatershed 63.004. Vegetation cover: Desert shrubs (whitethorn, creosotebush, and tarbush) with a crown spread approximating 30% and grasses with basal area of approximately 0.8% cover occupy 55% of the area. Grasses (black grama, curly mesquite grass, tobosa grass) with a basal area of 2.6% cover and shrub cover of 2% occupy the remaining 45% of the area. 1/ Tables show results of reevaluation of previously published data. Thiessen weighted using 13 rain gages. 2/ Precipitation station average based on period 1955-67; station average for runoff based on period 1958-67. 3/ Mean P based on 71-yr (1897-1967) U.S. Weather Bureau record period at Tombstone, Ariz.														

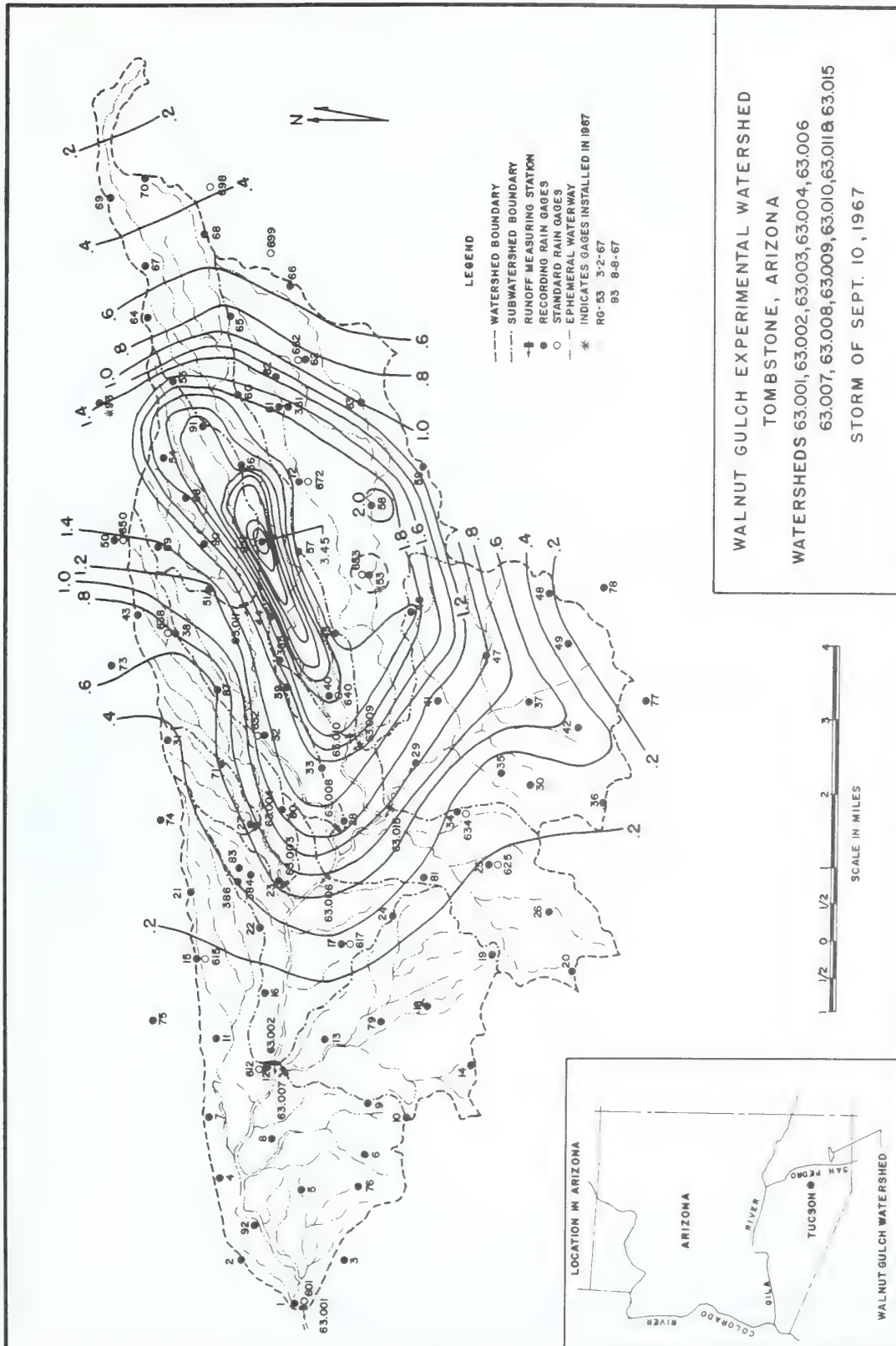
1967 SELECTED RUNOFF EVENT						TOMBSTONE, ARIZONA WATERSHED 63.003				63.03
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)
Event of September 10, 1967 1/										
8-10	RG R-38		9-10	RG	R-38		9-10			
	.01	.00		1517	.00	.00		1550	.000	.0000
8-11	.04	.00		1521	1.80	.12		1551	.002	.0000
8-12	.04	.00		1528	.17	.14		1553	.003	.0001
8-13	.25	.00		1540	.05	.15		1555	.006	.0003
8-16	.03	.00		1544	.60	.19		1559	.009	.0007
9-1	.40	.00		1559	.08	.21		1606	.006	.0016
9-2	.03	.00		1604	2.88	.45		1607	.006	.0017
				1607	3.80	.64		1608	.009	.0018
				1612	.84	.71		1613	.012	.0026
				1615	.80	.75		1619	.016	.0041
				1623	.23	.78		1620	.021	.0044
								1621	.025	.0048
								1622	.026	.0052
								1624	.026	.0061
								1625	.024	.0065
								1627	.021	.0073
								1631	.016	.0085
								1635	.012	.0095
								1638	.009	.0100
								1648	.006	.0112
								1655	.003	.0117
								1702	.002	.0120
								1708	.001	.0121
								1711	.001	.0122
								1712	.001	.0122
								1735	.000	.0123

Watershed conditions: Includes Subwatershed 63.004. Vegetation cover: Desert shrubs (whitethorn creosote bush, and tarbush) with a crown spread approximating 30 percent and grasses with basal area of approximately 0.8 percent cover occupy 55 percent of the area. Grasses (black grama, curly mesquite grass, tobosa grass) with a basal area of 2.6 percent cover and a shrub cover of 2 percent occupy the remaining 45 percent of the area.

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 2,238. FOR REVISED TOPOGRAPHIC (P.63.1-3), GEOLOGIC (P.63.1-4) AND VEGETATION (P.63.1-5) MAP OF WATERSHED, SEE MISC. PUB. NO. 1226 (1966). 1/ ISOHYETAL MAP ON P. 63.3-3.



TOMBSTONE, ARIZONA WATERSHED 63.003



REEVALUATION OF PREVIOUSLY PUBLISHED MONTHLY PRECIPITATION AND RUNOFF (inches) 1/						TOMBSTONE, ARIZONA WATERSHED 63.004 AREA - 560 ACRES								63.04
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1954	P	NR	NR	NR	NR	NR	NR	1.64	4.29	.57	.21	.00	.00	PARTIAL
	Q	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1955	P	.71	.08	.41	.00	.00	.40	11.06	3.72	.40	.12	.00	.14	17.04
	Q	.00	.00	.00	.00	.00	.00	4.93	.38	.00	.00	.00	.00	5.31
1956	P	.56	.15	.00	.18	.00	.38	4.08	1.36	.00	.28	.06	.10	7.15
	Q	.00	.00	.00	.00	.00	.00	.12	.05	.00	.00	.00	.00	.17
1957	P	1.31	.02	1.02	.05	.32	.40	1.86	4.18	.00	.99	.04	.29	10.48
	Q	.00	.00	.00	.00	.00	.00	T	.16	.00	.00	.00	.00	.16
1958	P	.00	1.06	1.70	.86	.01	.20	1.08	6.25	1.65	.88	.32	.00	14.01
	Q	.00	.00	.00	.00	.00	.00	.00	.37	.00	.00	.00	.00	.37
1959	P	.00	.48	.00	.00	.00	.92	2.89	3.62	.68	.94	1.42	.83	11.78
	Q	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1960	P	.76	.46	.28	.00	.00	.00	2.59	2.11	1.22	.47	.00	.26	8.15
	Q	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1961	P	.40	.14	.01	.00	.00	.78	2.38	4.28	.47	1.90	.55	1.06	11.97
	Q	.00	.00	.00	.00	.00	.00	T	.55	T	.00	.00	.00	.55
1962	P	1.32	.02	.77	.00	.00	.00	5.16	.42	1.64	.23	.70	.76	11.02
	Q	.00	.00	.00	.00	.00	.00	.05	.00	T	.00	.00	.00	.05
1963	P	.17	.29	.06	.13	.00	.00	2.02	3.34	1.36	.28	1.35	.27	9.27
	Q	.00	.00	.00	.00	.00	.00	T	.03	.01	.00	.00	.00	.04
1964	P	.19	.00	.47	.33	.00	.01	4.46	2.19	3.16	.52	.85	.16	12.34
	Q	.00	.00	.00	.00	.00	.00	.17	.03	.18	.00	.00	.00	.38
1965	P	.66	.09	.26	.00	.12	.15	3.02	1.51	1.19	.00	.26	3.43	10.69
	Q	.00	.00	.00	.00	.00	.00	.00	T	T	.00	.00	.00	T
1966	P	.72	1.04	.02	.08	.00	.03	4.12	4.71	2.12	.00	.37	.16	13.37
	Q	.00	.00	.00	.00	.00	.00	T	.01	T	.00	.00	.00	.01
1967	P	.00	.30	.00	.26	.58	.40	3.03	.00	4.47	.22	.10	3.41	12.77
	Q	.00	.00	.00	.00	.00	.00	T	T	.02	.00	.00	.00	.02
STA AVG P2/ (54-67) Q		.52 .00	.32 .00	.38 .00	.14 .00	.08 .00	.28 .00	3.53 .48	3.00 .14	1.35 .02	.50 .00	.43 .00	.78 .00	11.31 .64
MEAN 71 YR	P3/	.83	.77	.61	.28	.18	.49	3.64	3.49	1.52	.66	.63	.89	13.99
NOTES: Watershed conditions: Vegetative Cover: Entire area dominated by desert shrubs (whitethorn, creosotebush, and tarbush) with a crown spread approximating 38% and an understory of grasses with approximately 0.6% basal cover. 1/ Table shows results of reevaluation of previously published data. Thiessen weighted using 3 rain gages. 2/ Pre- cipitation and runoff records began in 1954. 3/ Mean P based on 71-yr. (1897-1967) U. S. Weather Bureau record period at Tombstone, Ariz.														

NOTES: Watershed conditions: Vegetative Cover: Entire area dominated by desert shrubs (whitethorn, creosotebush, and tarbush) with a crown spread approximating 38% and an understory of grasses with approximately 0.6% basal cover. ^{1/} Table shows results of reevaluation of previously published data. Thiessen weighted using 3 rain gages. ^{2/} Precipitation and runoff records began in 1954. ^{3/} Mean P based on 71-yr. (1897-1967) U. S. Weather Bureau record period at Tombstone, Ariz.

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS 1/

Notes: 1/ Table shows results of reevaluation of previously published data.

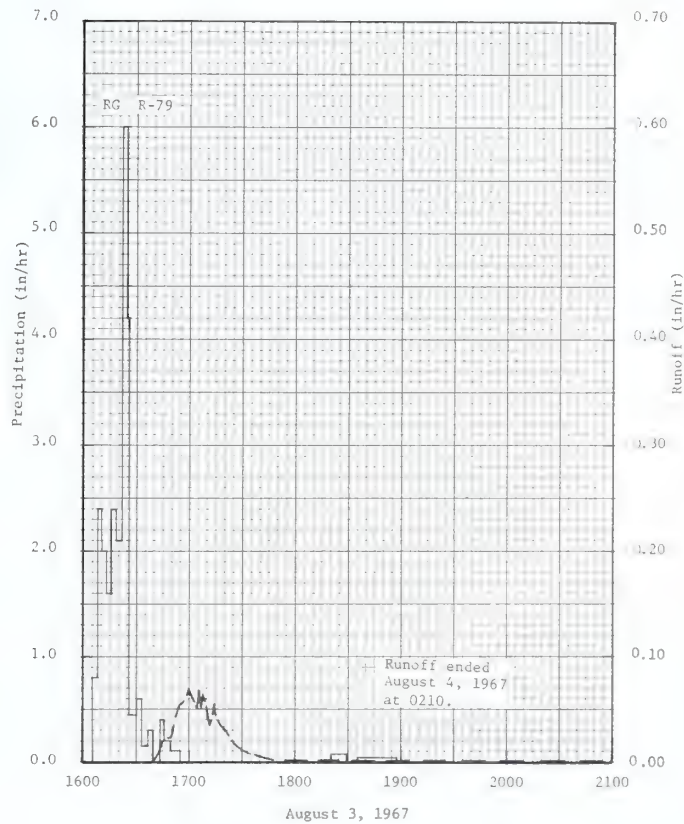
TOMBSTONE, ARIZONA WATERSHED 63.004

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 565. FOR TOPOGRAPHIC, GEOLOGIC AND VEGETATION MAPS OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, FOR 1966, USDA MISC. PUB. 1226, PP. 63.1-3, 63.1-4, and 63.1-5.

REEVALUATION OF PREVIOUSLY PUBLISHED 1/ MONTHLY PRECIPITATION AND RUNOFF (inches)						TOMBSTONE, ARIZONA		WATERSHED 63.007		63.07						
						AREA—3340 ACRES (5.22 SQ.MILES)										
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1966 P O	.71 .00	1.05 .00	.02 .00	.41 .00	.01 .00	.10 .00	3.67 T	5.81 .07	1.67 .01	.00 .00	.34 .00	.17 .00	13.96 .08			
1967 P Q	.00 .00	.24 .00	.02 .00	.17 .00	.22 .00	.28 .00	3.47 .02	2.74 .03	1.86 T	.45 .00	.09 .00	3.71 .00	13.25 .05			
STA AV ² / _P (66-67) Q	.36 .00	.64 .00	.02 .00	.29 .00	.12 .00	.19 .00	3.57 .01	4.28 .05	1.76 .01	.22 .00	.22 .00	1.94 .00	13.61 .07			
MEAN P 3/ 71 YR	.83	.77	.61	.28	.18	.49	3.64	3.49	1.52	.66	.63	.89	13.99			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS 1/																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1966	8-14	.09	8-14	.03	8-14	.03	8-14	.03	8-14	.03	8-14	.03	8-14	.03	8-14	.04
1967	8-3	.07	8-3	.03	8-3	.03	8-3	.03	8-3	.03	8-3	.03	8-3	.03	8-3	.04
MAXIMUMS FOR PERIOD OF RECORD																
1966 TO 1967	8-14 1966	.09	8-14 1966	.03	8-14 1966	.03	8-14 1966	.03	8-14 1966	.03	8-14 1966	.03	8-14 1966	.03	8-14 1966	.04
NOTES: Watershed conditions same as described under SELECTED EVENT. 1/ Tables show results of re-evaluation of previously published data. Thiessen weighted using 11 rain gages. 2/ Precipitation record began January, 1966; runoff record began June, 1966. 3/ Mean P based on 71-yr (1897-1967) U. S. Weather Bureau record period at Tombstone, Ariz.																
1967 SELECTED RUNOFF EVENT						TOMBSTONE, ARIZONA		WATERSHED 63.007		63.07						
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
Event of August 3, 1967																
	RG R-79		8-3	RG	R-79		8-3									
7-3	.26	.0000		1605	.00	0.00										
7-4	.18	.0000		1608	.80	.04		1641	.00000	.0000						
7-5	.37	.0000		1610	2.40	.12		1642	.00039	.0000						
7-12	.19	.0000		1613	2.00	.22		1643	.00356	.0000						
								1644	.01158	.0002						
7-13	.17	.0000		1616	1.60	.30		1645	.02028	.0004						
7-14	.01	.0000		1618	2.40	.38		1647	.02573	.0012						
7-16	.69	.0195E		1622	2.10	.52		1649	.02875	.0021						
7-17	.11	.0000		1624	6.00	.72		1650	.02401	.0025						
7-21	.02	.0000		1626	4.20	.86		1652	.03147	.0035						
7-25	.29	.0000		1630	.45	.89		1653	.04184	.0041						
7-27	.09	.0000		1633	.60	.92		1654	.05303	.0049						
7-30	.16	.0000		1637	.15	.93		1657	.05885	.0077						
7-31	.02	.0000		1639	.30	.94		1659	.06479	.0097						
8-2	.28	.0000		1643	0.00	.94		1700	.06901	.0108						
8-3	1/.11	.0000		1646	.40	.96		1701	.06479	.0120						
				1649	.20	.97		1702	.06841	.0131						
				1655	.10	.98		1703	.05885	.0141						
				1821	0.00	.98		1704	.05244	.0151						
				1829	.07	.99		1705	.05187	.0159						
				1836	0.00	.99		1706	.06901	.0169						
				1858	.03	1.00		1707	.05187	.0179						
Watershed conditions: Vegetation Desert shrubs (whitethorn, creosote bush, tarbush, and mortonia) occupy approximately 75% of the watershed. The remaining 25% of the area is grass. Most prevalent grasses are black grama, curly mesquite, sideoats grama, blue grama, and tobosa grass.																
								1708	.06660	.0189						
								1709	.05885	.0200						
								1710	.05303	.0209						
								1711	.04733	.0217						
								1712	.03602	.0224						
								1713	.04733	.0231						
								1714	.05535	.0240						
								1715	.04733	.0248						
								1716	.04184	.0256						
								1718	.03652	.0269						
								1720	.03147	.0280						
								1721	.02573	.0285						
								1724	.02028	.0296						
								1726	.01559	.0302						
								1730	.01158	.0312						
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 3367.8. FOR MAPS OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1966, USDA MISC. PUB. 1226, TOPOGRAPHIC, P. 63.1-3; GEOLOGIC, P. 63.1-4; AND VEGETATION, P. 63.1-5. 1/ RAINFALL PRIOR TO 1605 ON 8-3-67.																

1967 SELECTED RUNOFF EVENT			TOMBSTONE, ARIZONA				WATERSHED 63.007				63.07
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)	
Event of August 3, 1967—Continued											
							8-3	1734	.00831	.0318	
								1740	.00564	.0325	
								1745	.00356	.0329	
								1752	.00208	.0332	
								1803	.00104	.0335	
								1810	.00068	.0336	
								1817	.00050	.0337	
								1820	.00045	.0337	
								1825	.00036	.0337	
								1835	.00024	.0338	
								1845	.00018	.0338	
								1900	.00015	.0339	
								1915	.00012	.0339	
								1940	.00009	.0339	
								2010	.00005	.0340	
								2100	.00004	.0340	
							8-4	0210	.00002	.0340	
									.00001	.0341	

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 3367.8.

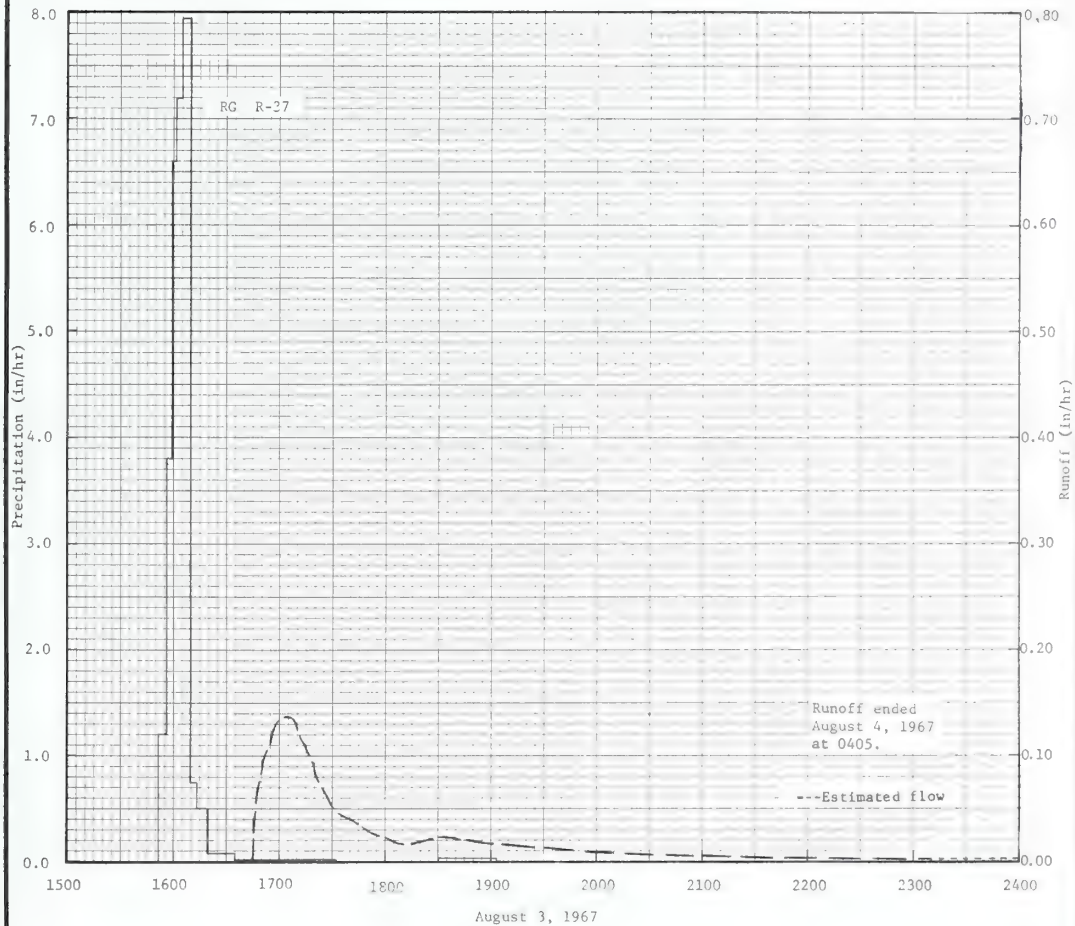


TOMBSTONE, ARIZONA WATERSHED 63.007

REEVALUATION OF PREVIOUSLY PUBLISHED 1/ MONTHLY PRECIPITATION AND RUNOFF (inches)							TOMBSTONE, ARIZONA AREA—5912 ACRES (9.24 SQ. MILES)				WATERSHED 63.015 63.15					
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1965	P ₁ / Q	.88 .00	.16 .00	.24 .00	.01 .00	.15 .00	.15 .00	3.66 .00	1.38 .00	1.46 .07	.03 .00	.30 .00	3.12 .00	11.54 .07		
1966	P Q	.87 .00	.96 .00	.24 .00	.09 .00	.01 .00	.20 .00	4.34 .08	4.63 .25	1.73 .00	.02 .00	.34 .00	.13 .00	13.32 .33		
1967	P Q	.00 .00	.34 .00	.04 .00	.21 .00	.49 .00	.32 .00	4.36 .05	3.32 .15	1.83 .06	.08 .00	.19 .00	2.89 .00	14.07 .26		
STA AV ² / _P (65-67) Q		.58 .00	.49 .00	.09 .00	.10 .00	.22 .00	.22 .00	4.12 .04	3.11 .13	1.67 .04	.04 .00	.28 .00	2.05 .00	12.97 .21		
MEAN P ₃ / 71 YR		.83	.77	.61	.28	.18	.49	3.64	3.49	1.52	.66	.63	.89	13.99		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS 1/																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1965	9-4	.11	9-4	.05	9-4	.07	9-4	.07	9-4	.07	9-4	.07	9-4	.07	9-4	.07
1966	8-19	.17	8-19	.13	8-19	.17	8-19	.20	8-19	.20	8-19	.23	8-19	.25	8-19	.25
1967	8-3	.14	8-3	.09	8-3	.11	8-3	.14	8-3	.14	8-3	.14	8-3	.14	8-3	.15
MAXIMUMS FOR PERIOD OF RECORD																
19 65 TO 19 67	8-19 1966	.17	8-19 1966	.13	8-19 1966	.17	8-19 1966	.20	8-19 1966	.20	8-19 1966	.23	8-19 1966	.25	8-19 1966	.25
NOTES: Watershed conditions: Same as for Selected Event. 1/ Tables show results of re-evaluation of previously published data. Thiessen weighted using 14 rain gages. 2/ Precipitation records began January, 1965; runoff records began June, 1965 (beginning of runoff season) upon completion of flume with capacity of 8000 cfs. 3/ Mean P based on 71-yr (1897-1967) U. S. Weather Bureau record period at Tombstone, Ariz.																
1967 SELECTED RUNOFF EVENTS							TOMBSTONE, ARIZONA				WATERSHED 63.015 63.15					
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
Event of August 3, 1967																
	RG R-37		8-3	RG	R-37		8-3									
7-3	.66	.0000		1552	.00	.00		1644	.00000	.0000						
7-5	.18	.0000		1556	1.20	.08		1645	.00130	.0000						
7-7	.99	.0224E		1559	3.80	.27		1646	.00621	.0001						
7-9	.57	.0040E		1602	6.60	.60		1647	.05957	.0006						
7-11	.04	.0000		1605	7.20	.96		1648	.06972	.0017						
7-12	.24	.0000		1609	7.95	1.49		1649	.07691	.0029						
7-13	.07	.0000		1613	.75	1.54		1650	.08446	.0043						
7-16	.44	.0000		1619	.50	1.59		1651	.09236	.0057						
7-17	.79E	.0197E		1635	.08	1.61		1654	.10922	.0108						
7-25	.66	.0078E		1732	.01	1.62		1656	.11794	.0146						
7-27	.45	.0000		1830	.00	1.62		1658	.12581	.0186						
7-31	.03	.0000		1903	.02	1.63		1700	.13393	.0230						
8-2	.22	.0000						1705	.13725	.0343						
								1708	.13393	.0410						
								1712	.12581	.0497						
								1713	.11794	.0517						
								1715	.10922	.0555						
								1717	.10062	.0590						
								1719	.09236	.0622						
								1720	.08446	.0637						
								1723	.07691	.0677						
								1725	.06972	.0702						
								1727	.06287	.0724						
								1729	.05636	.0744						
								1731	.05188	.0762						
								1733	.04835	.0778						
								1736	.04472	.0802						
								1739	.04105	.0823						
								1744	.03734	.0856						
								1747	.03328	.0874						
								1752	.02900	.0899						
								1800	.02308	.0934						
								1805	.01983	.0952						
								1810	.01778	.0968						
Continued on next page																
Watershed conditions: Vegetation cover: Desert shrubs (whitethorn, creosote bush, tar-bush) occupy 78% of the area with a crown spread of approximately 30% and an understory of grasses of less than 1% basal area. The remaining 22% of the area supports a grass cover (black grama, tobosa grass, blue grama, sideoats grama, and curly mesquite grass) of approximately 2% basal area.																
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 5961. FOR MAPS OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1966, USDA MISC. PUB. 1226, TOPOGRAPHIC, P. 63.1-3; GEOLOGIC, P. 63.1-4; AND VEGETATION, P. 63.1-5.																

1967			SELECTED RUNOFF EVENTS				TOMBSTONE, ARIZONA				WATERSHED 63.015				63.15	
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
			Event of August 3, 1967—Continued													
							8-3									
											1813				.01713	
															.0976	
											1817				.01778	
															.0988	
											1827				.02125	
															.1021	
											1835				.02271	
															.1050	
											1847				.02125	
															.1094	
											1902				.01778	
															.1143	
											1925				.01461	
															.1205	
											2000				.00850	
															.1272	
											2031				.00621	
															.1310	
											2104				.00472	
															.1340	
											2140				.00331	
															.1364	
											2221				.00218	
															.1383	
											2310				.00130E	
															.1397E	
											0006				.00066E	
															.1406E	
											0109				.00025E	
															.1411E	
											0227				.00005E	
															.1413E	
											0405				.00000E	
															.1414E	

NOTE: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 5961.

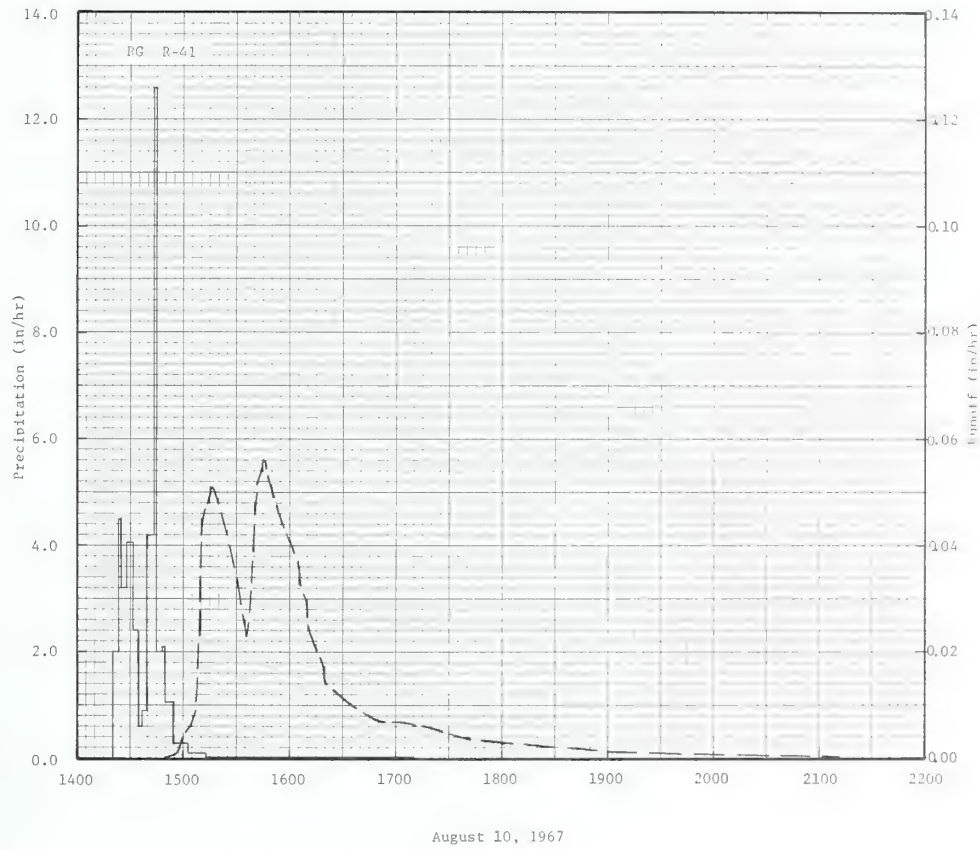


TOMBSTONE, ARIZONA WATERSHED 63.015

1967 SELECTED RUNOFF EVENTS			TOMBSTONE, ARIZONA			WATERSHED 63.015			63.15
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF		
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in./hr.)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	ACC. (inches)
			1/ Event of September 10, 1967						
RG R-41			9-10	RG	R-41		9-10		
8-10	.01	.0000		1420	.00	.00		1449	.0000
8-11	.33	.0000		1423	2.00	.10		1450	.0000
8-12	.03	.0000		1425	4.50	.25		1452	.0002
8-13	.14	.0000		1428	3.20	.41		1453	.0003
8-21	1.27	.0007		1432	4.05	.68		1455	.0003
9-1	.48	.0000		1434	2.40	.76		1457	.0007
9-2	.02	.0000		1437	.60	.79		1458	.0013
9-5	.05	.0000		1439	.90	.82		1459	.0033
				1443	4.20	1.10		1504	.0062
				1445	12.60	1.52		1507	.0085
				1448	2.00	1.62		1508	.0178
				1450	2.10	1.69		1509	.0250
				1454	1.05	1.76		1510	.0373
				1503	.27	1.80		1511	.0429
				1513	.12	1.82		1512	.0466
				1710	.01	1.83		1514	.0484
								1516	.0505
								1520	.0484
								1523	.0447
RG R-46			9-10	RG	R-46			1526	.0410
8-10	.07	.0000		1420	.00	.00		1528	.0373
8-11	.48	.0000		1425	3.96	.33		1531	.0333
8-13	.28	.0000		1428	2.60	.46		1532	.0290
8-15	.12	.0000		1430	7.20	.70		1535	.0250
8-16	.03	.0000		1432	4.80	.86		1536	.0235
8-21	.23	.0007		1435	3.00	1.01		1537	.0290
9-1	.53	.0000		1439	1.35	1.10		1538	.0333
9-2	.05	.0000		1444	4.08	1.44		1539	.0410
9-3	.04	.0000		1450	2.60	1.70		1540	.0447
9-7	.06	.0000		1456	1.80	1.88		1542	.0519
				1500	1.20	1.96		1544	.0539
				1515	.28	2.03		1545	.0564
								1548	.0519
								1553	.0484
								1556	.0447
								1600	.0410
								1604	.0373
								1606	.0333
								1609	.0290
								1611	.0250
								1615	.0212
								1619	.0178
								1625	.0146
								1645	.0085
								1650	.0078
								1705	.0073
								1717	.0062
								1737	.0047
								1801	.0033
								1832	.0022
								1905	.0013
								1942	.0007
								2024	.0002
								2112	.0000
								2207	.0000

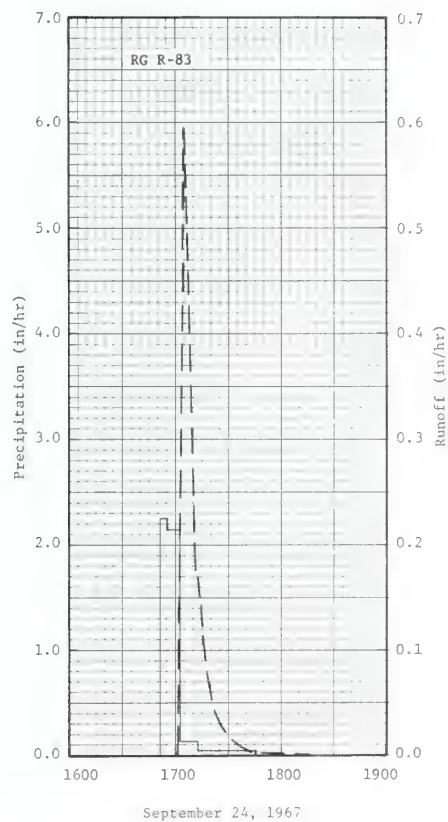
Watershed conditions:
Vegetation cover: Desert shrubs (whitethorn, creosote bush, tarbush) occupy 78% of the area with a crown spread of approximately 30% and an understory of grasses of less than 1% basal area. The remaining 22% of the area supports a grass cover (black grama, tobosa grass, blue grama, sideoats grama, and curly mesquite grass) of approximately 2% basal area.

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 5961. 1/ ISOHYETAL MAP ON P. 63.3-3 OF THIS VOLUME.



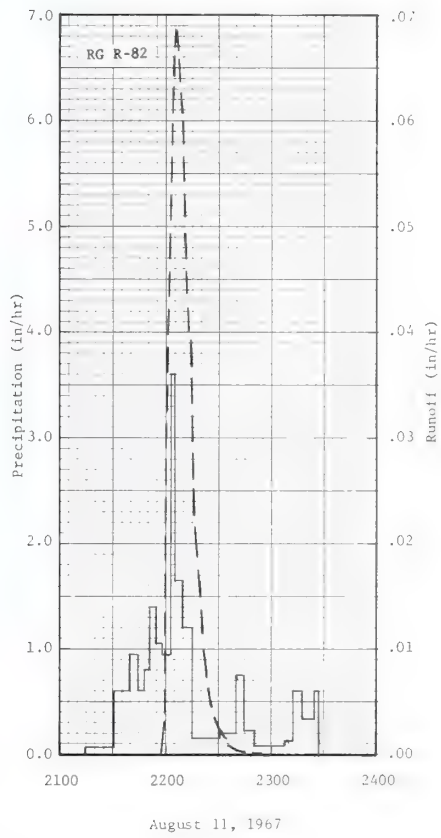
TOMBSTONE, ARIZONA WATERSHED 63.015

Cooperative Research Project of USDA and Arizona Agricultural Experiment Station •



TOMBSTONE, ARIZONA WATERSHED 63.103

MONTHLY PRECIPITATION AND RUNOFF (inches)							TOMBSTONE, ARIZONA WATERSHED 63.111 AREA—143 ACRES							63.111		
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	P1/ O	.00	.32	.02	.01	.25	.50	2.91	.00	4.85	.13	.15	2.32	11.46		
		.00	.00	.00	.00	.00	.00	T	.02	.22	.00	.00	.00	.24		
STA AVG	P2/ (62-67)	.54	.27	.19	.11	.04	.17	4.12	2.07	2.87	.19	.60	1.06	12.23		
MEAN	P3/ 71 YR	.00	.00	.00	.00	.00	.00	.49	.18	.42	.00	.00	.00	1.09		
		.83	.77	.61	.28	.18	.49	3.64	3.49	1.52	.66	.63	.89	13.99		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	9-10	.38	9-10	.21	9-10	.22	9-10	.22	9-10	.22	9-10	.22	9-10	.22	9-10	.22
MAXIMUMS FOR PERIOD OF RECORD																
19 62 TO 19 67	7-22 1964	2.90	7-22 1964	.83	7-22 1964	.83	7-22 1964	.83	7-22 1964	.83	7-22 1964	.84	9-10 1964	1.34	9-8 1964	1.45
NOTES 1/ Monthly precipitation is arithmetic average of 2 rain gages. 2/ Precipitation and runoff record began in 1962. 3/ Mean P based on 71-yr (1897-1967) U.S. Weather Bureau record period at Tombstone, Ariz.																
1967 SELECTED RUNOFF EVENT							TOMBSTONE, ARIZONA WATERSHED 63.111							63.111		
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
Event of August 11, 1967																
	RG R-82		8-11	RG	R-82		8-11									
7-11	.21	.00		2114	.00	.00		2158	.0000	.0000						
7-12	.04	.00		2131	.07	.02		2159	.0031	.0000						
7-13	.10	.00		2135	.60	.06		2200	.0157	.0002						
7-15	.05	.00		2139	.60	.10		2201	.0327	.0006						
7-16	.46	.00		2144	.96	.18		2202	.0472	.0013						
7-17	.67	.001		2148	.60	.22		2203	.0587	.0021						
7-19	.07	.00		2151	.80	.26		2204	.0654	.0032						
7-25	.10	.00		2154	1.40	.33		2205	.0671	.0043						
7-26	.10	.00		2158	1.05	.40		2206	.0687	.0054						
7-27	.27	.00		2203	.96	.48		2207	.0671	.0065						
7-31	.12	.00		2205	3.60	.60		2208	.0637	.0076						
8-2	.10	.00		2209	1.65	.71		2209	.0603	.0087						
8-3	.11	.00		2212	1.20	.77		2210	.0558	.0096						
8-4	.04	.00		2215	1.20	.83		2211	.0514	.0105						
8-5	.18	.00		2231	.15	.87		2212	.0458	.0113						
8-9	.11	.00		2240	.20	.90		2213	.0409	.0121						
8-10	.09	.00		2244	.75	.95		2214	.0362	.0127						
				2252	.22	.98		2215	.0298	.0132						
				2308	.08	1.00		2216	.0261	.0137						
				2313	.12	1.01		2217	.0224	.0141						
				2318	.60	1.06		2218	.0192	.0145						
				2325	.34	1.10		2219	.0163	.0148						
				2327	.60	1.12		2220	.0137	.0150						
								2222	.0098	.0154						
								2224	.0062	.0157						
								2226	.0048	.0159						
								2228	.0036	.0160						
								2230	.0026	.0161						
								2232	.0020	.0162						
								2234	.0014	.0162						
								2236	.0008	.0163						
								2238	.0005	.0163						
								2240	.0003	.0163E						
								2245	.0001	.0163E						
								2255	.0000	.0163E						
Watershed conditions: Representative of desert grassland. Vegetation dominated by short grasses (blue, sideoats, black and hairy grama, curly mesquite); also, present shrubs include (soapweed, mesquite, burroweed), basal cover of grasses approximately 2.5 percent. Canopy approximately 20 percent.																
NOTE: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 144.19. FOR TOPOGRAPHIC, GEOLOGIC, AND VEGETATION MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1966, USDA MISC. PUB. 1226, P. 63.1-3, AND 63.1-4, 63.1-5.																



TOMBSTONE, ARIZONA WATERSHED 63.111

MONTHLY PRECIPITATION AND RUNOFF (inches)							NEWELL, SOUTH DAKOTA							WATERSHED W-2	57M-2
														AREA - 115 ACRES	
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL	
1967	P 1/	.19	.22	.25	2.36	1.01	4.61	.28	.70	2.53	.30	.22	.10	12.77	
	Q	.00	.20	.00	.01	.62	.19	.00	.00	.03	.00	.00	.00	1.05	
STA AV2/P		.20	.24	.48	1.17	2.15	3.28	1.69	1.10	1.16	.45	.28	.21	12.41	
(58-67) Q		.01	.07	.15	.01	.11	.10	.11	T	.01	.00	T	.00	.57	
MEAN P 3/		.41	.36	.73	1.68	2.68	3.03	2.12	1.35	1.30	.98	.51	.37	15.52	
60 YR															

NOTES: Watershed conditions: 100% rangeland. Condition classes: Excellent, 19%; good, 64%; fair, 17%. Degree of grazing: Full. 1/ Monthly precipitation obtained from rain gage W-2A. 2/ Precipitation and runoff records began Jan. 1958. 3/ Mean P based on 60-yr. (1908-1967) U. S. Weather Bureau record period at Newell, S. Dak.

1967 DAILY PRECIPITATION (inches)							NEWELL, SOUTH DAKOTA							WATERSHED W-2	57M-2
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC			
1					.09					.10	.10				
2			.11			.13									
3			.05												
4		.02	.02												
5		.01		.05		1.63		.68							
6	.04	.07	.02			.02	.03								
7						.21									
8							.07								
9						.13			.04						
10					.04										
11		.03				.53									
12			.01	.15	.16	.03		.02	.31						
13			.02	.85		.59			.05						
14		.06							.17						
15	.02			.13	.20	.03			1.16						
16	.03			.14					.38						
17															
18						.62	.10		.38						
19		.03	.01						.04						
20														.03	
21															
22						.20									
23	.01				.16	.31									
24	.01										.11				
25	.01					.18					.01				
26	.01						.08								
27														.02	
28										.20				.02	
29				.04											
30				1.00	.29									.03	
31	.06		.01		.07										
TOTAL	.19	.22	.25	2.36	1.01	4.61	.28	.70	2.53	.30	.22	.10			
STA AV	.20	.24	.48	1.17	2.15	3.28	1.69	1.10	1.16	.45	.28	.21			

NOTES: ALL PRECIPITATION FROM JAN. 1 TO MAY 12 AND NOV. 1 TO DEC. 31 IS SNOW; ALL OTHER PRECIPITATION IS RAIN. PRECIPITATION OBTAINED FROM RAIN GAGE W-2A. STA AV IS BASED ON PERIOD 1958-67. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 65.2-4.

Cooperative Research Project of USDA and the South Dakota Agricultural Experiment Station

1967 DAILY DISCHARGE (inches)						NEWELL, SOUTH DAKOTA WATERSHED W-2 57M-2						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1					.05							
2					T							
3		.08										
4												
5					T	.12						
6					.02	.02						
7					.10							
8					.06							
9					.16							
10					.05							
11					.01	.01						
12					.01							
13					.01	.02						
14					T							
15					.02							
16		.04			.05				.01			
17					.04				.01			
18					.03							
19					.01	.02			.01			
20												
21		.08										
22												
23												
24												
25												
26												
27												
28												
29												
30					.01							
31												
MEAN		.20			.01	.62	.19		.03			
INCHES												

NOTES:

DISCHARGE RECORD OBTAINED BY A-35 RECORDER ON POND.

MONTHLY PRECIPITATION AND RUNOFF (inches)						NEWELL, SOUTH DAKOTA						WATERSHED W-5		57M-5
												AREA - 46 ACRES		
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1967	P ¹ / _O	.27	.46	.42	3.91	1.76	7.92	1.21	.31	2.62	.74	.40	.52	20.54
		.21	.07	.00	.08	.13	.57	.05	.00	.00	.00	.00	.00	1.11
	STA AV2/P	.25	.31	.64	1.45	2.61	4.28	1.63	1.33	1.06	.43	.29	.32	14.60
	(58-67) Q	.02	.02	.13	.02	.09	.28	.04	.10	T	.00	.00	.00	.70
	MEAN P ³ / _Q													
60 YR		.41	.36	.73	1.68	2.68	3.03	2.12	1.35	1.30	.98	.51	.37	15.52
NOTES: Watershed conditions: 100% rangeland. Condition classes: Excellent, 7%; good, 93%. Degree of grazing: Full. Production of cover: 2,600 lb/ac of oven dry material. 1/ Monthly precipitation obtained from rain gage W-5A. 2/ Precipitation and runoff records began Jan. 1958. 3/ Mean P based on 60-yr. (1908-1967) U. S. Weather Bureau record period at Newell, S. Dak.														

1967 DAILY PRECIPITATION (inches)						NEWELL, SOUTH DAKOTA						WATERSHED W-5		57M-5
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC		
1					.17					.01	.20			
2			.05	.09						.22				
3						.07								
4	.12		.10											
5		.06		.02		2.67		.25						
6		.15	.10							.09				
7						.36								
8				.02									.09	
9				.02			.17							
10														
11		.02			.05	.90								
12				.15	.10	1.40			.48					
13				1.72		1.05			.09					
14		.04		.55					.20					
15	.03				.40				1.13					
16	.07	.06												
17								.06	.08				.15	
18		.05				.54	.20		.43					
19			.13	.05					.20					
20							.75						.11	
21														
22					.23	.12					.07			
23						.58								
24		.03									.13			
25					.03	.05								
26						.18	.06							
27							.03						.07	
28					.03					.42		.10		
29														
30				1.38	.71				.01					
31	.05				.04									
TOTAL	.27	.46	.42	3.91	1.76	7.92	1.21	.31	2.62	.74	.40	.52		
STA AV	.25	.31	.64	1.45	2.61	4.28	1.63	1.33	1.06	.43	.29	.32		
NOTES: ALL PRECIPITATION FROM JAN. 1 TO MAY 12 AND NOV. 1 TO DEC. 31 IS SNOW; ALL OTHER PRECIPITATION IS RAIN. PRECIPITATION OBTAINED FROM RAIN GAGE W-5A. STA AV IS BASED ON PERIOD 1958-67. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 65.5-4.														

Cooperative Research Project of USDA and the South Dakota Agricultural Experiment Station

1967 DAILY DISCHARGE (inches)						NEWELL, SOUTH DAKOTA WATERSHED W-5 57M-5						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1					.01							
2					T							
3												
4												
5					T	.16						
6					.04	.03						
7					.07	.02						
8					T							
9												
10												
11						.20						
12						.06						
13				.04		.09						
14				.03								
15		.07										
16					T							
17												
18						.01						
19												
20							.05					
21												
22	.13											
23												
24												
25												
26												
27												
28												
29												
30				.01	.01							
31	.08											
MEAN	.21	.07		.08	.13	.57	.05					
INCHES												
NOTES DISCHARGE RECORD OBTAINED BY A-35 RECORDER ON POND.												

MONTHLY PRECIPITATION AND RUNOFF (inches)						NEWELL, SOUTH DAKOTA WATERSHED W-7 AREA - 160 ACRES								57M-7
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1967	P 1/	.11	.26	.24	2.57	1.61	6.14	.89	.28	1.54	.45	.24	.24	14.57
	O	.18	.00	.00	.01	.09	.33	.00	T	.00	.00	.00	.00	.61
	STA AV2/P	.21	.29	.60	1.26	2.47	3.87	1.63	1.33	.94	.40	.29	.30	13.59
	(58-67) Q	.02	.02	.14	.02	.05	.12	.04	.02	.00	.00	.00	.00	.43
	MEAN P 3/	.41	.36	.73	1.68	2.68	3.03	2.12	1.35	1.30	.98	.51	.37	15.52
60 YR														

NOTES Watershed conditions: 100% rangeland. Condition classes: Good, 82%; fair, 18%. Degree of grazing: Close. Production of cover: 2,400 lb/ac. 1/ Monthly precipitation obtained from rain gage W-7A. 2/ Precipitation and runoff records began Jan. 1958. 3/ Mean P based on 60-yr. (1908-1967) U. S. Weather Bureau record period at Newell, S. Dak.

1967 DAILY PRECIPITATION (inches)						NEWELL, SOUTH DAKOTA WATERSHED W-7								57M-7
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC		
1		.03			.17					.02	.12			
2			.06							.15				
3						.07								
4	.01		.02			2.06		.20						
5		.03		.02										
6		.06	.04							.03				
7						.34								
8				.02									.06	
9				.02			.23							
10					.05									
11		.02				.95								
12				.10	.11	.50		.02	.26					
13				1.15		.97			.04					
14		.03		.34					.14					
15	.04				.16				.60					
16	.04	.04		.07										
17								.06	.06				.09	
18		.02				.41	.14		.24					
19			.12	.05					.15					
20							.38						.04	
21														
22						.10					.04			
23					.24	.49								
24		.03			.07	.08					.08			
25														
26						.12	.08							
27						.05	.06							
28										.25				
29					.07									
30				.80	.70				.05				.02	
31	.02				.04								.03	
TOTAL	.11	.26	.24	2.57	1.61	6.14	.89	.28	1.54	.45	.24	.24		
STA AV	.21	.29	.60	1.26	2.47	3.87	1.63	1.33	.94	.40	.29	.30		

NOTES ALL PRECIPITATION FROM JAN. 1 TO MAY 12 AND NOV. 1 TO DEC. 31 IS SNOW; ALL OTHER PRECIPITATION IS RAIN. PRECIPITATION OBTAINED FROM RAIN GAGE W-7A. STA AV IS BASED ON PERIOD 1958-67. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 65.7-4.

Cooperative Research Project of USDA and the South Dakota Agricultural Experiment Station

1967 DAILY DISCHARGE (inches)						NEWELL, SOUTH DAKOTA WATERSHED W-7 57M-7						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1												
2												
3												
4					T							
5					T	.14		T				
6												
7					T							
8					.07	T						
9					.01							
10					.01							
11						.05						
12						.04						
13						.09						
14				T								
15				.01								
16												
17												
18						T						
19												
20						.01						
21												
22	.07											
23												
24												
25												
26												
27												
28												
29												
30												
31	.11											
MEAN												
INCHES	.18				.01	.09	.33	T				
NOTES DISCHARGE RECORD OBTAINED BY A-35 RECORDER ON POND.												

MONTHLY PRECIPITATION AND RUNOFF (inches)						NEWELL, SOUTH DAKOTA							WATERSHED W-12		57F-12
													AREA - 90 ACRES		
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL	
1967	P 1/	.75	.21	.28	2.71	1.65	4.49	1.10	.83	2.70	.57	.28	.26	15.83	
	Q	.52	.20	.16	.47	1.85	1.57	.00	.00	.17	.00	.00	.00	4.94	
	STA AV2/P	.29	.26	.67	1.37	2.59	3.58	1.63	1.06	1.25	.50	.32	.27	13.79	
	(58-67) Q	.05	.06	.41	.21	.92	.80	.13	.06	.02	.00	.01	.01	2.68	
	MEAN P 3/														
60 YR		.41	.36	.73	1.68	2.68	3.03	2.12	1.35	1.30	.98	.51	.37	15.52	

NOTES:

Watershed conditions: 100% rangeland. Condition classes: Good, 94%; fair, 6%. Degree of grazing: Moderate.
 1/ Monthly precipitation obtained from rain gage W-12A. 2/ Precipitation and runoff records began Jan. 1958.
 3/ Mean P based on 60-yr. (1908-1967) U. S. Weather Bureau record period at Newell, S. Dak.

1967 DAILY PRECIPITATION (inches)						NEWELL, SOUTH DAKOTA							WATERSHED W-12		57F-12
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC			
1			.02		.16	.02	.03			.02	.16				
2					.02			.10							
3						.07									
4		.02													
5		.03	.03			.12									
6	.32	.08	.12			.01	.06			.04					
7		.02				.18		.58							
8					.04										.14
9						.20									
10															
11			.01	.02	.04	.94			.02						.02
12			.01	.20	.17	.09			.18						
13			.05	1.10		.80		.10	.20	.03					
14		.02	.04	.31	.05	.50	.06		.34						
15					.23	.20			1.08	.01					
16	.07			.10					.25	.03					
17	.06							.05	.03						.02
18						.48	.43		.44						
19		.04		.14		.01			.16						
20															.02
21				.02											
22	.04					.08									
23	.10					.32					.01				
24	.02				.08	.33	.06			.02	.11				
25	.02														
26						.05	.20								.01
27						.36									
28										.26					
29				.08	.05										.02
30	.08			.66	.38										.03
31	.04				.18		.32								
TOTAL	.75	.21	.28	2.71	1.65	4.49	1.10	.83	2.70	.57	.28	.26			
STA AV	.29	.26	.67	1.37	2.59	3.58	1.63	1.06	1.25	.50	.32	.27			

NOTES: ALL PRECIPITATION FROM JAN. 1 TO MAY 12 AND NOV. 1 TO DEC. 31 IS SNOW; ALL OTHER PRECIPITATION IS RAIN.
 PRECIPITATION OBTAINED FROM RAIN GAGE W-12A. STA AV IS BASED ON PERIOD 1958-67. FOR MAP OF WATERSHED, SEE HYDROLOGIC
 DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 65.12-4.

Cooperative Research Project of USDA and the South Dakota Agricultural Experiment Station

1967 DAILY DISCHARGE (inches)						NEWELL, SOUTH DAKOTA WATERSHED W-12 57F-12						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1					.07							
2												
3												
4												
5					.10							
6					.32							
7					.34							
8					.32							
9					.31							
10					.14							
11					.04	.12						
12					.03	.03						
13				.12	.06	.53						
14				.12	.03	.17			.01			
15					.02	.41			.02			
16		.20		.01	.02				.01			
17					.02							
18					.02	.31			.10			
19				T	.01				.03			
20												
21	.11											
22												
23												
24												
25												
26												
27			.16									
28												
29												
30	.41	-----		.22		-----			-----		-----	
31		-----		-----		-----			-----		-----	
MEAN												
INCHES	.52	.20	.16	.47	1.85	1.57			.17			

NOTES:

DISCHARGE RECORD OBTAINED BY A-35 RECORDER ON POND. SPILLWAY FLOW DURING MAY AND JUNE.

MONTHLY PRECIPITATION AND RUNOFF (inches)						NEWELL, SOUTH DAKOTA WATERSHED W-13 AREA - 160 ACRES								57F-13
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1967	P 1/	.45	.24	.18	2.65	1.39	4.17	1.33	.25	1.66	.49	.26	.52	13.59
	O	.00	.34	.13	.09	.65	.68	.00	.00	T	T	.00	.00	1.89
	STA AV2/P	.25	.26	.51	1.17	2.51	3.32	1.41	1.07	.90	.44	.28	.30	12.42
	(58-67) Q	.00	.06	.23	.03	.35	.36	T	T	T	T	T	.00	1.03
	MEAN P 3/													
60 YR		.41	.36	.73	1.68	2.68	3.03	2.12	1.35	1.30	.98	.51	.37	15.52

NOTES: Watershed conditions: 100% rangeland. Condition classes: Excellent, 8%; good, 67%; fair, 25%. Degree of grazing: Full. Production of cover: 1,900 lb/ac. 1/ Thiessen weighted precipitation obtained from rain gages W-13B and W-13C. 2/ Precipitation and runoff records began Jan. 1958. 3/ Mean P based on 60-yr. (1908-1967) U. S. Weather Bureau record period at Newell, S. Dak.

1967 DAILY PRECIPITATION (inches)						NEWELL, SOUTH DAKOTA WATERSHED W-13								57F-13
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC		
1	.01	.02	.05		.04		.07				.13			
2	.01		.03							.12				
3														
4		.02												
5		.04	.04	.03		.53								
6	.19	.04				.02								
7	.03	.03				.31	.02	.25		.03				
8	.10												.09	
9														
10														
11		.04		.04		1.48								
12				.24	.16	.24			.27					
13				.74		.69			.19	.12				
14		.05		.18			.02		.10	.02				
15	.02				.11	.24			.65					
16	.01			.03										
17									.01				.28	
18						.20	.05		.25				.02	
19			.06	.10			.01		.19				.05	
20							.02						.05	
21														
22						.03					.04			
23					.20	.35								
24	.02											.07		
25				.03	.29	.05					.02			
26				.03		.03	.11							
27							.53							
28										.20				
29				.08	.04									
30				1.15	.45									.03
31	.06				.10		.50							
TOTAL	.45	.24	.18	2.65	1.39	4.17	1.33	.25	1.66	.49	.26	.52		
STA AV	.25	.26	.51	1.17	2.51	3.32	1.41	1.07	.90	.44	.28	.30		

NOTES: ALL PRECIPITATION FROM JAN. 1 TO MAY 12 AND NOV. 1 TO DEC. 31 IS SNOW; ALL OTHER PRECIPITATION IS RAIN. THIESSEN WEIGHTED PRECIPITATION OBTAINED FROM RAIN GAGES W-13B AND W-13C. STA AV IS BASED ON PERIOD 1958-67. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 65.13-4.

Cooperative Research Project of USDA and the South Dakota Agricultural Experiment Station

1967 DAILY DISCHARGE (inches)						NEWELL, SOUTH DAKOTA WATERSHED W-13 57F-13						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1					.06							
2												
3		.30										
4												
5						.01						
6					.21							
7					.33	.02						
8			.13		.03							
9					.02							
10												
11						.27						
12				.01		.11			T			
13		.04		.01		.27						
14				.01								
15												
16				.01								
17												
18									T			
19				T								
20												
21												
22												
23												
24												
25												
26												
27												
28										T		
29												
30		-----			.05							
31		-----										
MEAN												
INCHES		.34	.13	.09	.65	.68			T	T		
NOTES: DISCHARGE RECORD OBTAINED BY A-35 RECORDER ON POND.												

MONTHLY PRECIPITATION AND RUNOFF (inches)						NEWELL, SOUTH DAKOTA								WATERSHED W-14	57F-14
						AREA - 35 ACRES									
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL	
1967	P1/	1.50	.40	.41	3.46	1.27	3.42	.34	1.29	2.79	.35	.34	.46	16.03	
	O	.63	.25	.03	.54	.36	.37	.00	.00	.01	.00	.00	.00	2.19	
STA AV2/P		.42	.31	.70	1.78	2.50	3.26	1.75	1.10	1.14	.55	.37	.35	14.23	
(58-67) Q		.09	.05	.24	.12	.29	.38	.15	.02	.01	T	.01	T	1.36	
MEAN	P3/														
60 YR		.41	.36	.73	1.68	2.68	3.03	2.12	1.35	1.30	.98	.51	.37	15.52	

NOTES Watershed conditions: 100% rangeland. Condition classes: Good, 54%; fair, 46%. Degree of grazing: Full. Production of cover: 2,600 lb/ac. 1/ Monthly precipitation obtained from rain gage W-14A. 2/ Precipitation and runoff records began Jan. 1958. 3/ Mean P based on 60-yr. (1908-1967) U. S. Weather Bureau record period at Newell, S. Dak.

1967 DAILY PRECIPITATION (inches)						NEWELL, SOUTH DAKOTA			WATERSHED W-14			57F-14
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.08	.02			.03	.05						.13
2	.03							.21	.05	.10		.03
3	.02					.17						
4		.13										
5	.82		.19	.02		.07						
6	.14		.05							.04		
7		.09				.08		.66				
8												.12
9		.03				.10						
10												
11						1.09						.14
12			.04	.40	.20	.07			.11			.01
13			.06	1.10		.92		.37	.16			
14		.13	.05	.26					.38			
15	.05				.30	.03			1.30	.02		
16	.01			.15					.01			
17	.01					.21		.05	.03			.08
18						.04	.11		.40			
19				.28					.18	.02		
20				.06					.17			.10
21												
22												
23						.35					.02	
24	.21										.16	
25	.03				.32	.04	.02			.01		
26						.01	.14					
27						.12						.01
28						.07				.16		
29				.03								
30			.02	1.16	.28							
31	.10			1.16	.14		.07					
TOTAL	1.50	.40	.41	3.46	1.27	3.42	.34	1.29	2.79	.35	.34	.46
STA AV	.42	.31	.70	1.78	2.50	3.26	1.75	1.13	1.14	.55	.37	.35

NOTES: ALL PRECIPITATION FROM JAN. 1 TO MAY 12 AND NOV. 1 TO DEC. 31 IS SNOW; ALL OTHER PRECIPITATION IS RAIN. PRECIPITATION OBTAINED FROM RAIN GAGE W-14A. STA AV IS BASED ON PERIOD 1958-67. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 65.14-4.

1967 DAILY DISCHARGE (inches)						NEWELL, SOUTH DAKOTA WATERSHED W-14 57F-14						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1					.15	.01						
2												
3						.01						
4												
5												
6			.03		.08							
7					.06							
8					.03							
9					.03							
10												
11						.10						
12					.01	.01						
13					.05	.13						
14					.02							
15						.11			.01			
16					.01							
17												
18												
19												
20												
21		.25										
22												
23												
24												
25												
26												
27												
28												
29	.63											
30		-----			.46	-----			-----			
31												
MEAN												
INCHES	.63	.25	.03	.54	.36	.37			.01			
NOTES: SPILLWAY FLOW: MAY AND JUNE. DISCHARGE RECORD OBTAINED BY A-35 RECORDER ON POND.												

MONTHLY PRECIPITATION AND RUNOFF (inches)						NEWELL, SOUTH DAKOTA WATERSHED W-15 AREA - 115 ACRES								57F-15
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1967	P 1/	1.43	.28	.22	3.74	1.43	3.52	.36	1.09	2.71	.35	.30	.36	15.79
	Q	.65	.13	.00	.32	.53	.34	.00	.00	.01	.00	.00	.00	1.98
	STA AV2/P	.46	.28	.73	1.78	2.61	3.31	1.84	1.07	1.13	.58	.39	.33	14.51
	(58-67) Q	.07	.02	.12	.13	.38	.32	.17	.01	.01	T	.01	.00	1.24
	MEAN P 3/													
60 YR		.41	.36	.73	1.68	2.68	3.03	2.12	1.35	1.30	.98	.51	.37	15.52
NOTES: Watershed conditions: 100% rangeland. Condition classes: Good, 41%; fair, 59%. Degree of grazing: Full. Production of cover: 2,800 lb/ac. 1/ Monthly precipitation obtained from rain gage W-15A. 2/ Precipitation and runoff records began Jan. 1958. 3/ Mean P based on 60-yr. (1908-1967) U. S. Weather Bureau record period-at Newell, S. Dak.														
1967 DAILY PRECIPITATION (inches)						NEWELL, SOUTH DAKOTA WATERSHED W-15								57F-15
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC		
1	.03				.02	.05						.13		
2	.01	.02						.22	.01	.12		.03		
3	.01					.12								
4		.08												
5	.82		.10	.02		.08								
6	.19		.02							.01				
7		.07				.14		.62						
8													.08	
9		.03				.03								
10														
11						1.13							.14	
12			.02	.39	.20	.07			.12				.01	
13			.04	1.10		.91		.20	.19					
14		.08	.02	.26		.37			.37					
15	.05				.42	.04			1.22	.02				
16	.01			.14					.01					
17	.01					.36		.05	.03				.07	
18						.08	.09		.41					
19				.25					.18	.02				
20				.03					.17				.05	
21														
22														
23						.28						.02		
24	.21											.12		
25	.04				.37	.05	.02			.01				
26						.01	.18							
27						.13							.01	
28						.04				.17				
29				.05										
30				1.50	.28									
31	.05		.02		.14		.07							
TOTAL	1.43	.28	.22	3.74	1.43	3.52	.36	1.09	2.71	.35	.30	.36		
STA AV	.46	.28	.73	1.78	2.61	3.31	1.84	1.07	1.13	.58	.39	.33		
NOTES: ALL PRECIPITATION FROM JAN. 1 TO MAY 12 AND NOV. 1 TO DEC. 31 IS SNOW; ALL OTHER PRECIPITATION IS RAIN. PRECIPITATION OBTAINED FROM RAIN GAGE W-15A. STA AV IS BASED ON PERIOD 1958-67. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 65.15-4.														

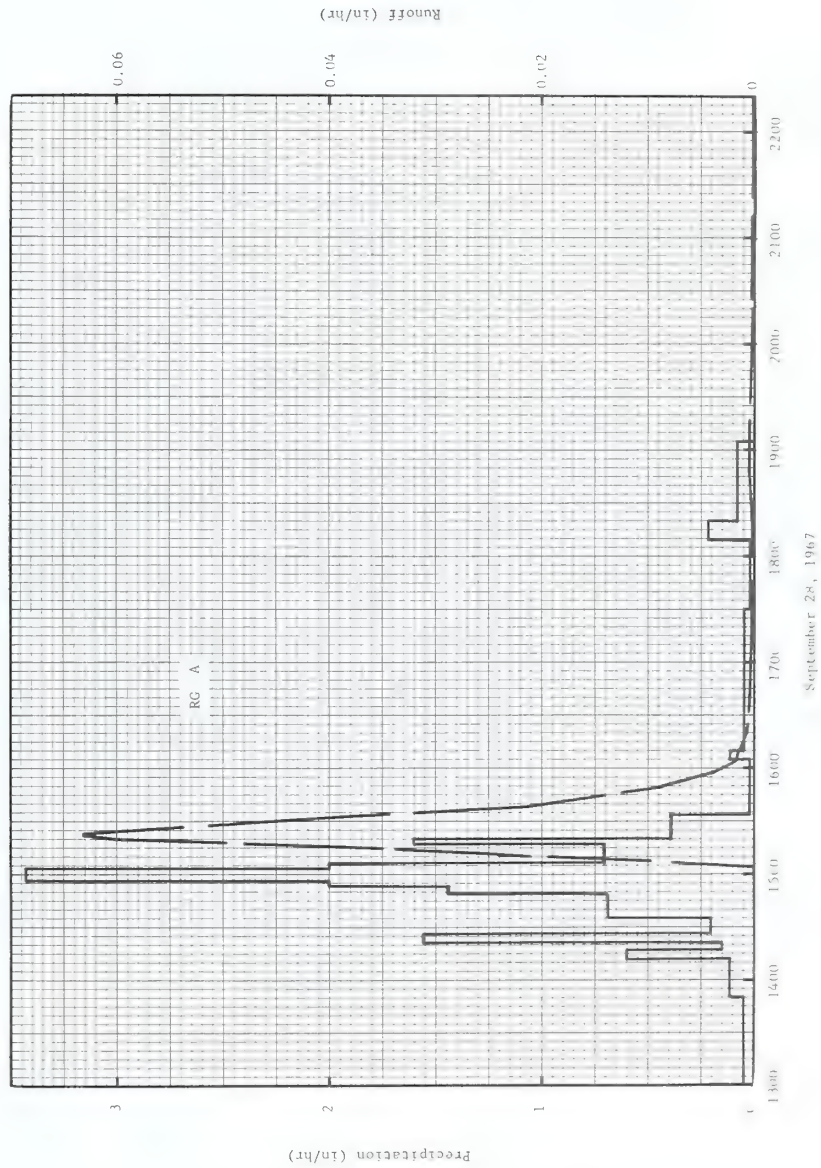
Cooperative Research Project of USDA and the South Dakota Agricultural Experiment Station

1967 DAILY DISCHARGE (inches)						NEWELL, SOUTH DAKOTA WATERSHED W-15 57F-15						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1					.10							
2					.01							
3					.02	.01						
4					.05							
5					.26							
6					.08							
7												
8												
9												
10												
11						.06						
12						.03						
13				.06		.16						
14				.03								
15					.01	.08						
16												
17												
18									.01			
19												
20												
21		.13										
22												
23												
24												
25												
26												
27												
28												
29	.65											
30				.23								
31												
MEAN												
INCHES	.65	.13		.32	.53	.34			.01			
NOTES: SPILLWAY FLOW: MAY AND JUNE. DISCHARGE RECORD OBTAINED BY A-35 RECORDER ON POND.												

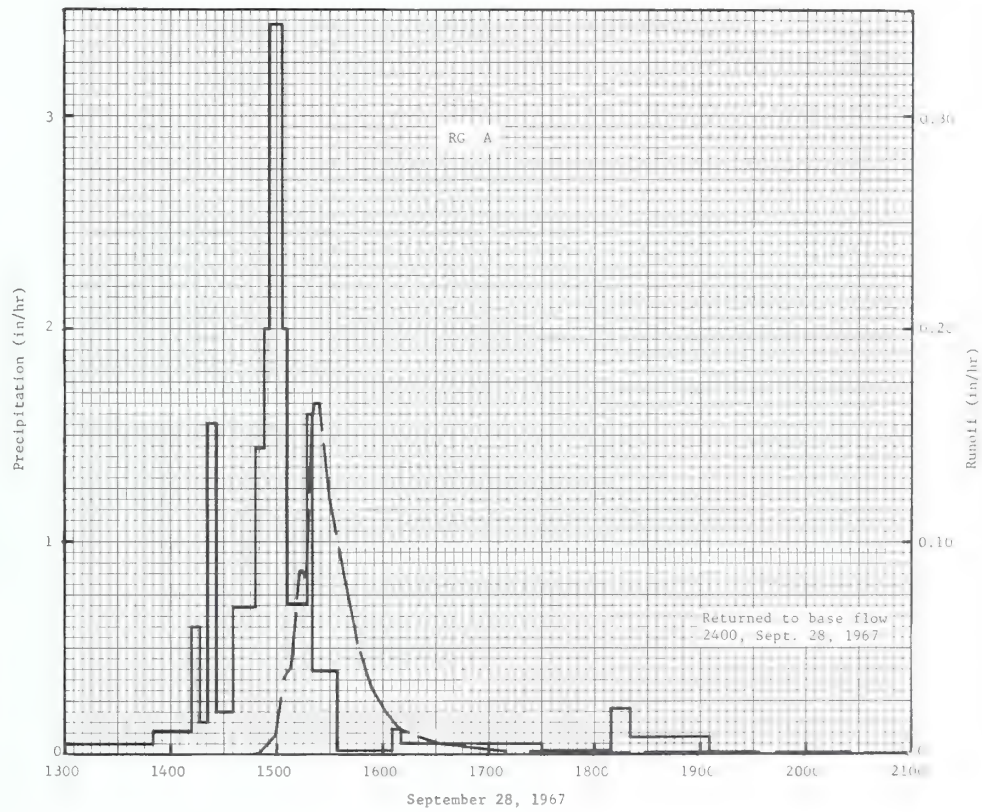
MONTHLY PRECIPITATION AND RUNOFF (inches)						MOOREFIELD, WEST VIRGINIA WATERSHED W-1 AREA—8.57 ACRES										
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	1/	.62	1.34	4.84	1.09	5.07	1.66	4.90	6.01	1.87	2.90	1.91	3.91	36.12		
	2/	T	T	1.43	.02	.02	.00	T	.48	.08	.04	.00	1.25	3.32		
STA AVG	P	1.86	2.43	3.09	2.89	2.78	2.72	3.03	2.82	3.00	1.73	1.70	1.89	29.94		
(58-67)	O	.24	.52	1.23	.37	.21	.05	.01	.10	.02	.05	.01	.14	2.95		
MEAN	P															
69 YR		2.19	2.04	2.78	2.74	3.36	3.75	3.55	3.34	2.53	2.37	1.79	1.99	32.43		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	8-25	.22	8-25	.13	3-7	.16	3-6	.37	3-6	.49	3-6	.58	3-6	.62	12-7	.82
MAXIMUMS FOR PERIOD OF RECORD																
1958 TO 1967	8-3 1958	.44	8-3 1958	.17	3-19 1963	.25	3-19 1963	.68	3-19 1963	.89	3-20 1963	1.08	3-12 1962	1.35	3-11 1962	1.87
NOTES: Watershed conditions: 100% permanent pasture with controlled grazing. 1/ Precipitation records from rain gage A. 2/ Precipitation records began April 1958; runoff records began May 1958. 3/ Mean P based on 69-yr (1896-1964) U. S. Weather Bureau record period at Moorefield and Moorefield McNeill, West Virginia.																

1967 SELECTED RUNOFF EVENT						MOOREFIELD, WEST VIRGINIA WATERSHED W-1					
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in./hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)	
Event of September 28, 1967											
	RG A			RG	A						
8-28	.00	.0328	9-28	1300	.00	.00	9-28	1500	.0000	.0000	
8-29	.00	.0134		1350	.05	.04		1504	.0001	.0000	
8-30	.00	.0083		1412	.11	.08		1507	.0077	.0002	
8-31	.00	.0083		1417	.60	.13		1510	.0194	.0009	
9-1	.00	.0083		1421	.15	.14		1514	.0339	.0027	
9-2	.00	.0083		1426	1.56	.27		1520	.0601	.0074	
9-3	.00	.0083		1435	.20	.30		1522	.0631	.0094	
9-4	.00	.0083		1448	.69	.45		1523	.0631	.0105	
9-5	.00	.0083		1453	1.44	.57		1530	.0450	.0168	
9-6	.00	.0051		1456	2.00	.67		1539	.0211	.0217	
9-7	.00	.0047		1503	3.43	1.07		1550	.0088	.0245	
9-20	.04	.0000		1506	2.00	1.17		1558	.0039	.0253	
9-21	.02	.0000		1517	.71	1.30		1604	.0017	.0256	
9-27	.05	.0000		1520	1.60	1.38		1610	.0013	.0257	
9-28	4/ .09	.0000		1534	.39	1.47		1620	.0008	.0259	
Watershed conditions											
Permanent pasture, native grasses and weeds dormant due to extremely dry weather conditions, poor cover.											
				1605	.02	1.48		1640	.0003	.0261	
				1610	.12	1.49		1730	.0001	.0263	
				1730	.05	1.56		1820	.0001	.0264	
				1809	.02	1.57		1850	.0003	.0265	
				1820	.22	1.61		1906	.0003	.0266	
				1905	.08	1.67		2020	.0001	.0269	
								2220	.0000	.0270	

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 8.6414. FOR REVISED MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1962, USDA MISC. PUB. 1070, P. 66.1-3. 4/ .05 IN. FROM 0300 TO 0500. .04 IN. FROM 0735 TO 0800.										
--	--	--	--	--	--	--	--	--	--	--

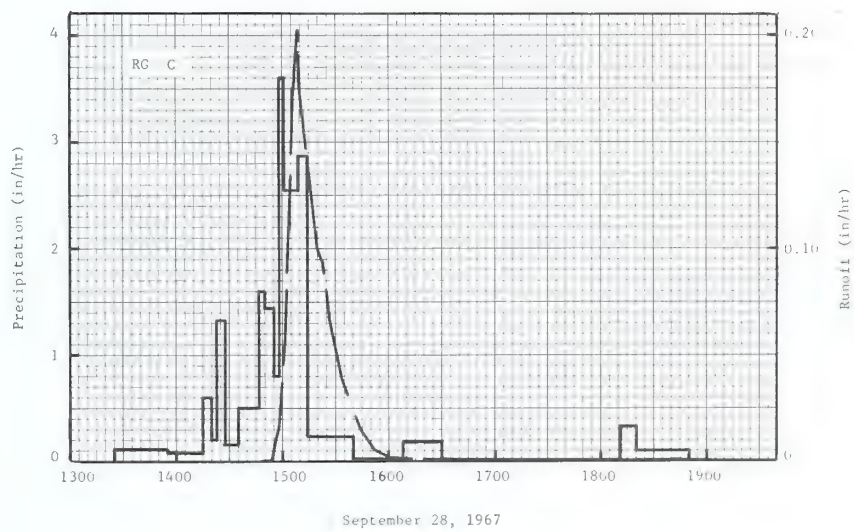


MONTHLY PRECIPITATION AND RUNOFF (inches)							MOOREFIELD, WEST VIRGINIA WATERSHED W-2 AREA—9.73 ACRES									
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	P 1/	.62	1.34	4.84	1.09	5.07	1.66	4.90	6.01	1.87	2.90	1.91	3.91	36.12		
	Q	.03	.05	1.71	T	.10	.00	.02	.97	.09	.19	T	1.25	4.41		
STA AVG 2/P		1.86	2.43	3.09	2.89	2.78	2.72	3.03	2.82	3.00	1.73	1.70	1.89	29.94		
(58-67)	Q	.32	.58	1.26	.42	.26	.06	.03	.16	.05	.09	.03	.18	3.44		
MEAN 69 YR	P 3/	2.19	2.04	2.78	2.74	3.36	3.75	3.55	3.34	2.53	2.37	1.79	1.99	32.43		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	8-25	.42	8-25	.28	8-25	.34	3-6	.53	3-6	.74	3-6	.83	3-6	.86	3-6	1.05
MAXIMUMS FOR PERIOD OF RECORD																
1958 TO 1967	8-3 1958	.76	8-3 1958	.34	8-3 1958	.38	3-19 1963	.82	3-20 1963	1.05	3-20 1963	1.21	3-12 1962	1.44	3-20 1963	2.02
NOTES: Watershed conditions: 100% permanent pasture with controlled grazing. 1/ Precipitation records from rain gage A. 2/ Precipitation and runoff records began April 1958. 3/ Mean P based on 69-yr (1896-1964) U. S. Weather Bureau record period at Moorefield and Moorefield McNeill, West Virginia.																
1967 SELECTED RUNOFF EVENT							MOOREFIELD, WEST VIRGINIA WATERSHED W-2									
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
Event of September 28, 1967																
	RG A			RG	A											
8-28	.00	.0262	9-28	1300	.00	.00	9-28	1447	.0000	.0000						
8-29	.00	.0036		1350	.05	.04		1450	.0011	.0011						
8-30	.00	.0024		1412	.11	.08		1456	.0059	.0004						
8-31	.00	.0024		1417	.60	.13		1459	.0088	.0007						
9-1	.00	.0019		1421	.15	.14		1501	.0185	.0012						
9-20	.04	.0000		1426	1.56	.27		1504	.0356	.0026						
9-21	.02	.0000		1435	.20	.30		1506	.0397	.0038						
9-27	.05	.0000		1448	.69	.45		1508	.0417	.0052						
9-28	4/ .09	.0000		1453	1.44	.57		1510	.0556	.0068						
				1456	2.00	.67		1513	.0863	.0103						
				1503	3.43	1.07		1515	.0863	.0132						
				1506	2.00	1.17		1516	.0831	.0146						
				1517	.71	1.30		1518	.1061	.0178						
				1520	1.60	1.38		1520	.1563	.0221						
				1534	.39	1.47		1522	.1653	.0275						
				1605	.02	1.48		1524	.1653	.0330						
				1610	.12	1.49		1530	.1204	.0473						
				1730	.05	1.56		1539	.0800	.0623						
				1809	.02	1.57		1546	.0530	.0701						
				1820	.22	1.61		1554	.0317	.0757						
				1905	.08	1.67		1603	.0185	.0795						
								1610	.0120	.0813						
								1620	.0077	.0829						
								1630	.0051	.0840						
								1648	.0028	.0852						
								1710	.0011	.0859						
								1740	.0007	.0863						
								1750	.0003	.0864						
								1808	.0003	.0865						
								1820	.0007	.0866						
								1828	.0011	.0867						
								1834	.0011	.0868						
								1900	.0007	.0872						
								2100	.0001	.0881						
								2400	5/ .0001	.0884						
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 9.8111. FOR REVISED MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1962, USDA MISC. PUB. 1070, P. 66.2-3. 4/ .05 IN FROM 0300 TO 0500; .04 FROM 0735 TO 0800. 5/ RETURNED TO BASE FLOW.																



MOOREFIELD, WEST VIRGINIA WATERSHED W-2

MONTHLY PRECIPITATION AND RUNOFF (inches)							MOOREFIELD, WEST VIRGINIA WATERSHED W-4 AREA—6.32 ACRES									
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	P ^{1/} _Q	.62	1.32	4.87	1.17	4.97	1.62	4.83	5.99	1.86	2.87	2.06	4.01	36.19		
		.02	.01	.90	T	.03	T	.05	.67	.07	.06	T	.69	2.50		
STA. A. V. S. P. (58-67)	2/ _C	1.89	2.40	3.12	2.90	2.91	2.76	2.92	2.76	2.98	1.68	1.73	1.87	29.92		
		.28	.47	.84	.20	.14	.04	.05	.15	.05	.06	.02	.11	2.41		
MEAN 69 YR	3/ _P	2.19	2.04	2.78	2.74	3.36	3.75	3.55	3.34	2.53	2.37	1.79	1.99	32.43		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	9-28	.20	8-25	.13	8-25	.16	3-7	.21	3-6	.29	8-25	.38	8-25	.53	8-24	.64
MAXIMUMS FOR PERIOD OF RECORD																
1958 TO 1967	8-3 1958	.69	8-3 1958	.27	2-19 1961	.31	3-19 1963	.64	3-19 1963	.76	3-20 1963	.85	2-18 1961	.97	2-17 1961	1.54
NOTES: Watershed conditions: 100% permanent pasture with controlled grazing. 1/ Precipitation records from rain gage C. 2/ Precipitation records began June 1958; runoff records began May 1958. 3/ Mean P based on 69-yr (1896-1964) U. S. Weather Bureau record period at Moorefield and Moorefield McNeill, West Virginia.																
1967 SELECTED RUNOFF EVENT							MOOREFIELD, WEST VIRGINIA WATERSHED W-4									
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in./hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in./hr)	ACC. (inches)						
Event of September 28, 1967																
	RG C			RG	C											
8-28	.00	.0482	9-28	1325	.00	.00	9-28	1448	.0000	.0000						
8-29	.00	.0140		1355	.12	.06		1452	.0002	.0002	T					
8-30	.00	.0038		1415	.00	.09		1454	.0005	.0005	T					
8-31	.00	.0038		1420	.60	.14		1456	.0105	.0002						
9-1	.00	.0011		1423	.20	.15		1458	.0168	.0006						
9-20	.04	.0000		1428	1.32	.26		1501	.0549	.0024						
9-21	.02	.0000		1435	.17	.28		1503	.0974	.0050						
9-27	.04	.0000		1447	.50	.38		1506	.1742	.0118						
9-28	4/.08	.0000		1450	1.60	.46		1508	.2024	.0180						
				1455	1.44	.58		1510	.1742	.0243						
				1458	.80	.62		1517	.1232	.0417						
				1501	3.60	.80		1520	.1014	.0473						
				1509	2.55	1.14		1523	.0935	.0522						
				1514	2.88	1.38		1527	.0677	.0575						
				1540	.23	1.48		1534	.0380	.0637						
Watershed conditions																
Permanent pasture, native grasses and weeds dormant due to extremely dry weather conditions, poor cover.																
				1608	.02	1.49		1544	.0151	.0681						
				1630	.19	1.56		1552	.0064	.0695						
				1811	.01	1.58		1600	.0023	.0701						
				1820	.33	1.63		1605	.0017	.0703						
				1850	.10	1.68		1610	.0011	.0704						
								1620	.0011	.0706						
								1630	.0005	.0707						
								1650	.0002	.0708						
								1740	.0000	.0709						
								1826	.0000	.0709						
								1830	.0005	.0709						
								1834	.0005	.0709						
								1846	.0002	.0710						
								1940	.0000	.0711						
NOTES: TO CONVERT RUNOFF IN IN./HR TO CFS, MULTIPLY BY 6.3727. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES 1956-59, USDA MISC. PUB. 945, P. 66.4-3. 4/ .06 IN. FROM 0330 TO 0510; .02 IN. FROM 0745 TO 0815.																

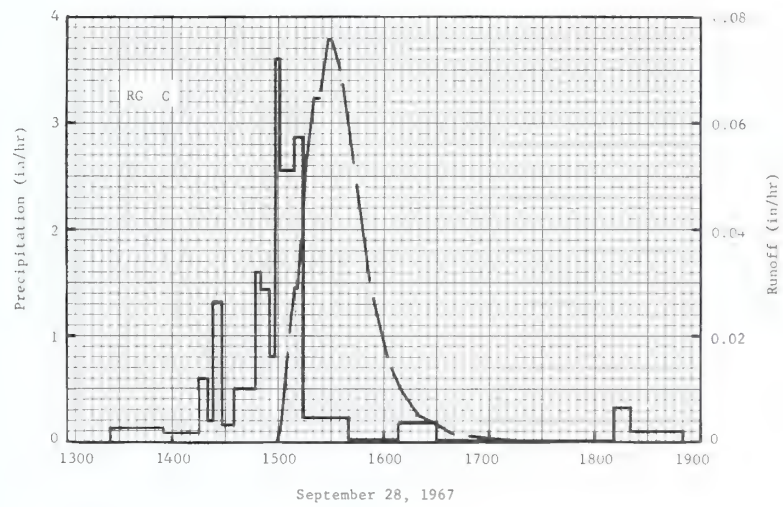


MOOREFIELD, WEST VIRGINIA WATERSHED W-4

MONTHLY PRECIPITATION AND RUNOFF (inches)							MOOREFIELD, WEST VIRGINIA WATERSHED W-5 AREA—9.55 ACRES									
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	P 1/ Q	.62 T	1.32 .01	4.87 1.62	1.17 T	4.97 .05	1.62 .00	4.83 .01	5.99 1.12	1.86 .05	2.87 .09	2.06 T	4.01 1.01	36.19 3.96		
STA AVG (58-67)	P 2/ Q	1.89 .37	2.40 .70	3.12 1.30	2.90 .36	2.91 .23	2.76 .05	2.92 .02	2.76 .17	2.98 .02	1.68 .09	1.73 .03	1.87 .16	29.92 3.50		
MEAN 69 YR	P 3/ Q	2.19	2.04	2.78	2.74	3.36	3.75	3.55	3.34	2.53	2.37	1.79	1.99	32.43		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	8-25	.30	8-25	.21	8-25	.27	3-6	.39	3-6	.56	8-25	.69	8-25	.95	8-24	1.10
MAXIMUMS FOR PERIOD OF RECORD																
1958 TO 1967	8-3 1958	.65	8-3 1958	.27	8-3 1958	.31	3-19 1963	.70	3-19 1963	.95	3-20 1963	1.14	2-18 1961	1.39	2-17 1961	2.21
NOTES: Watershed conditions: 100% permanent pasture with controlled grazing. 1/ Precipitation records from rain gage C. 2/ Precipitation records began June 1958; runoff records began May 1958. 3/ Mean P based on 69-yr (1896-1964) U. S. Weather Bureau record period at Moorefield and Moorefield McNeill, West Virginia.																

1967 SELECTED RUNOFF EVENT							MOOREFIELD, WEST VIRGINIA WATERSHED W-5				
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)	
Event of September 28, 1967											
	RG C			RG	C						
8-28	.00	.0862	9-28	1325	.00	.00	9-28	1459	.0000	.0000	
8-29	.00	.0170		1355	.12	.06		1501	.0022	T	
8-30	.00	.0052		1415	.09	.09		1504	.0111	.0004	
8-31	.00	.0025		1420	.60	.14		1508	.0251	.0016	
9-1	.00	.0014		1423	.20	.15		1509	.0287	.0020	
9-20	.04	.0000		1428	1.32	.26		1511	.0287	.0030	
9-21	.02	.0000		1435	.17	.28		1516	.0540	.0064	
9-27	.04	.0000		1447	.50	.38		1520	.0645	.0104	
9-28	4/.08	.0000		1450	1.60	.46		1523	.0645	.0136	
				1455	1.44	.58		1528	.0757	.0194	
				1458	.80	.62		1530	.0757	.0220	
				1501	3.60	.80		1535	.0700	.0280	
				1509	2.55	1.14		1552	.0304	.0423	
				1514	2.88	1.38		1602	.0161	.0461	
				1540	.23	1.48		1610	.0100	.0479	
				1608	.02	1.49		1620	.0052	.0491	
				1630	.19	1.56		1630	.0028	.0498	
				1811	.01	1.58		1640	.0016	.0502	
				1820	.33	1.63		1702	.0003	.0505	
				1850	.10	1.68		1726	.0000	.0506	
Watershed conditions											
Permanent pasture, native grasses and weeds dormant due to extremely dry weather conditions, poor cover.											

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 9.6296. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 66.5-3. 4/ .06 IN. FROM 0330 TO 0510. .02 IN. FROM 0745 TO 0815.											
--	--	--	--	--	--	--	--	--	--	--	--



MOOREFIELD, WEST VIRGINIA WATERSHED W-5

MONTHLY PRECIPITATION AND RUNOFF (inches) ^{1/}							NORTH DANVILLE, VERMONT AREA—10,610 ACRES (16.58 SQ.MILES)					WATERSHED W-1 67.01		
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1965	P	2.26	3.26	1.38	2.60	.76	4.97	4.33	7.60	4.77	4.72	5.69	2.92	45.26
	Q	1.05	.81	1.51	3.66	.95	1.08	.39	.58	1.11	2.06	2.41	1.30	16.33
1966	P	2.85	3.00	5.26	1.96	4.18	3.84	2.83	5.20	3.76	2.71	2.92	3.93	42.44
	Q	.84	.71	3.23	4.93	3.41	1.06	.24	.29	.36	.47	.75	.96	17.25
1967	P	2.25	2.89	1.06	3.72	5.50	3.16	4.77	3.42	3.46	5.71	3.97	4.52	44.43
	Q	.48	.41	.53	5.25	4.14	1.29	.78	.49	.39	1.73	1.24	1.62	18.35
STA AV ^{2/P} (58-67)	P	2.89	3.36	3.26	3.59	3.66	3.89	3.92	4.57	3.11	4.45	4.37	3.38	44.45
	Q	.88	.81	1.46	6.33	2.46	.89	.46	.42	.43	1.46	1.59	1.35	18.54
MEAN P ^{3/} 73 YR		2.57	2.14	2.44	2.82	3.23	3.77	3.47	3.27	3.48	3.06	3.15	2.59	35.99

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1965	11-17	.03	11-17	.03	11-17	.06	11-17	.18	11-17	.30	11-17	.414	11-16	.56	4-15	1.36
1966	3-25	.03	3-25	.03	3-25	.06	3-25	.17	3-25	.32	3-24	.52	3-24	.75	4-16	2.18
1967	10-18	.04	10-18	.04	5-3	.07	10-19	.17	5-3	.288	4-2	.49	4-2	.79	4-16	1.58

MAXIMUMS FOR PERIOD OF RECORD																
1959 TO 1967	10-24 1959	.10	10-24 1959	.10	10-24 1959	.20	10-24 1959	.50	10-24 1959	.77	10-24 1959	1.14	10-24 1959	1.45	4-12 1960	3.86

Notes: Watershed conditions: Predominantly hardwood forest, 64%; cultivated - 16% in long hay rotations and about 1% in row crops, total 17%; pasture, largely bluegrass, 15%; idle land in grass and woody plants, 3%; and homesites and roads, 1%. ^{1/} Precipitation records from the R-1 gage. ^{2/} Precipitation records began Jan. 1, 1959 and runoff records began Oct. 1959, part year values not included in Sta Av. ^{3/} Mean P based on 73-yr (1895-1967) U.S. Weather Bureau record period at St. Johnsbury, Vt.

1965 DAILY AIR TEMPERATURE (degrees F)										NORTH DANVILLE, VERMONT WATERSHED W-1					67.01									
DAY	JAN		FEB		MAR		APR		MAY		JUNE		JULY		AUG		SEPT		OCT		NOV		DEC	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	18	-5	18	-20	31	14	36	10	62	30	58	35	71	40	73	46	60	48	57	41	40	21	31	8
2	10	-8	22	8	42	22	36	12	60	28	72	40	72	40	66	55	66	42	51	32	26	16	32	26
3	24	10	16	-9	50	30	37	20	64	31	58	35	66	54	66	54	68	38	50	28	45	19	36	25
4	26	14	14	-4	51	26	44	23	62	45	71	37	73	49	70	44	70	42	32	28	54	24	38	33
5	31	5	9	-14	48	30	50	28	50	28	77	46	75	46	77	40	68	38	34	25	34	20	34	27
6	30	16	28	9	41	36	54	28	56	32	82	40	64	45	83	49	72	42	41	24	45	28	35	23
7	20	-2	38	26	44	36	44	26	65	33	86	54	74	39	85	58	74	44	54	27	44	32	23	4
8	36	14	44	34	46	24	42	32	68	40	81	57	76	56	78	60	64	48	53	41	41	28	24	6
9	46	18	34	6	43	18	45	36	78	46	84	53	80	51	80	66	67	39	58	40	41	23	29	6
10	20	6	26	6	38	26	51	32	77	40	72	48	75	50	80	56	78	57	61	42	35	16	34	14
11	22	-1	39	16	26	11	54	24	75	51	66	43	76	46	71	48	68	38	51	40	40	25	29	10
12	30	13	32	14	26	6	40	34	73	46	76	40	72	46	76	44	62	34	54	38	40	34	22	20
13	24	10	32	3	32	12	44	32	73	49	53	36	79	44	78	55	56	34	48	31	44	36	30	21
14	14	-26	10	-11	32	12	54	28	58	30	51	40	78	62	83	52	58	44	55	28	38	24	32	30
15	-2	-30	30	-10	33	8	60	28	74	24	65	31	74	50	88	57	59	50	58	32	30	20	32	30
16	2	-12	36	8	36	4	50	37	74	43	72	36	78	44	84	62	58	38	52	36	36	24	34	30
17	6	-18	24	-10	36	13	40	31	76	53	74	38	70	57	85	58	58	32	52	28	41	24	32	23
18	12	-14	30	10	32	26	46	28	71	50	72	49	66	57	82	66	60	51	55	26	25	20	30	20
19	15	-6	10	-4	37	18	52	22	58	42	78	44	68	49	70	62	52	50	70	45	29	18	27	4
20	19	9	6	-12	26	8	60	27	64	45	84	47	60	44	69	50	76	52	71	46	28	14	10	-2
21	20	4	14	-12	20	7	60	28	70	29	82	56	70	44	69	45	82	62	66	46	32	26	22	-3
22	33	4	24	-1	26	4	50	34	73	42	78	55	71	41	71	49	82	60	48	44	38	30	26	10
23	8	-4	10	-6	31	14	40	28	60	32	80	49	73	55	78	56	82	65	53	41	33	29	31	10
24	24	7	24	-12	28	2	40	22	72	26	67	45	79	53	69	42	67	54	45	34	32	16	33	24
25	30	6	42	14	36	10	54	14	78	31	62	42	72	49	66	52	58	40	42	31	30	14	34	20
26	30	8	40	7	31	26	36	28	80	58	72	36	72	46	58	53	64	34	51	35	34	26	20	5
27	32	10	18	0	30	10	40	34	72	49	77	40	72	46	76	56	44	28	37	28	32	26	12	-6
28	25	-6	26	-3	30	0	58	30	70	41	84	48	68	52	74	45	51	25	32	27	32	24	20	2
29	9	-8	---	---	22	1	62	24	60	36	78	58	70	49	53	40	49	34	31	23	26	18	28	10
30	17	-8	---	---	28	16	70	28	56	32	66	49	70	42	54	40	54	26	50	22	25	12	34	16
31	22	-10	---	---	22	8	---	---	60	37	---	---	72	44	55	31	---	---	51	34	---	---	44	33
AV.	21	0	25	1	34	15	48	27	67	39	73	44	72	50	73	51	64	43	50	34	36	23	29	16
MEAN	10.5	13.1	24.7	37.6	53.1	58.4	61.2	62.2	62.2	62.2	61.2	58.4	61.2	62.2	62.2	62.2	53.6	42.0	29.3	22.3	29.3	22.3	22.3	22.3
STA AV	24	4	27	4	34	16	47	28	63	40	74	47	75	52	73	49	66	42	55	35	40	26	26	9

NOTES: TEMPERATURE DATA IS FROM R-12 READINGS TAKEN DAILY FROM HYDRO-THERMOGRAPH CHARTS. STA AV (STATION AVERAGE) BASED ON 1960-1965 RECORDS.

1966 DAILY AIR TEMPERATURE (degrees F)												NORTH DANVILLE, VERMONT												WATERSHED W-1				67.01			
DAY	JAN		FEB		MAR		APR		MAY		JUNE		JULY		AUG		SEPT		OCT		NOV		DEC								
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN							
1	48	28	21	8	46	32	40	26	57	37	59	32	76	49	78	46	75	46	50	41	54	34	35	30							
2	28	14	35	8	32	30	36	30	40	28	64	33	82	62	74	56	74	51	52	41	60	49	30	14							
3	33	22	32	18	40	25	37	28	53	22	75	36	88	67	59	48	63	51	58	34	62	38	16	7							
4	27	8	35	18	42	24	38	24	44	31	74	58	74	52	75	45	53	48	59	37	38	32	20	5							
5	32	8	26	14	38	32	40	26	58	28	74	55	78	47	76	52	68	50	53	39	38	27	26	2							
6	32	14	20	-2	36	28	43	24	51	33	82	60	69	54	76	48	68	46	48	36	36	31	28	20							
7	30	10	22	-9	31	17	44	24	38	22	73	57	76	60	82	52	62	48	61	38	42	33	32	20							
8	17	0	30	-6	24	6	36	32	50	24	70	48	72	54	84	57	70	44	69	42	45	34	34	31							
9	12	-5	28	4	35	0	38	32	38	30	65	44	76	49	82	54	72	42	70	42	50	42	40	33							
10	24	0	46	16	41	10	42	30	36	24	52	42	80	60	78	60	72	48	60	36	57	48	48	36							
11	28	-4	49	38	30	6	38	32	45	28	61	41	76	61	79	56	63	43	56	32	57	40	60	26							
12	2	-14	40	23	26	2	42	30	50	26	70	35	70	60	71	57	62	36	42	34	45	34	30	14							
13	9	-17	34	22	30	23	44	31	45	32	75	41	82	65	68	52	64	38	50	28	38	20	26	12							
14	18	6	35	16	42	10	48	32	68	28	81	58	70	53	70	44	62	47	56	33	36	18	30	24							
15	16	-8	28	8	33	4	53	26	71	35	72	50	66	48	70	50	60	42	60	43	31	18	25	12							
16	6	-9	27	4	34	1	52	27	58	46	58	50	72	44	74	62	56	37	52	44	28	16	26	12							
17	18	-4	28	2	42	2	52	28	60	43	72	50	77	47	70	59	64	37	44	36	37	28	34	26							
18	22	16	16	0	55	30	50	26	57	43	72	44	77	62	81	56	67	42	42	35	46	36	37	18							
19	27	16	10	-10	46	34	57	25	56	50	73	44	72	55	76	55	61	43	44	37	36	18	18	7							
20	31	22	2	-18	41	34	43	38	68	49	80	50	64	45	70	49	58	36	44	34	36	14	19	6							
21	33	15	8	-8	42	26	56	38	66	44	68	47	65	43	72	46	54	30	54	34	38	14	22	14							
22	32	12	18	6	48	22	54	32	68	40	76	40	72	46	62	55	56	46	58	30	40	15	21	17							
23	26	15	30	8	43	36	56	28	77	39	82	49	78	54	66	57	52	42	58	38	40	18	18	8							
24	28	20	38	2	46	38	44	35	81	43	80	68	80	62	62	50	47	36	58	35	36	25	20	5							
25	20	-4	26	20	41	23	54	36	73	47	68	54	80	62	66	46	51	36	54	29	45	33	18	14							
26	20	-14	32	22	34	17	36	26	78	40	78	54	70	52	64	50	52	32	49	26	46	38	18	10							
27	22	-5	42	16	31	12	40	20	78	44	83	58	70	46	64	46	54	31	55	27	48	31	18	4							
28	10	2	40	18	19	10	36	26	66	56	80	54	59	54	67	44	56	40	60	30	48	38	19	6							
29	17	1	---	---	29	6	52	28	67	40	82	54	68	56	70	41	54	34	56	28	48	34	25	12							
30	31	5	---	---	32	12	58	26	60	35	72	53	70	50	77	56	56	46	30	21	36	34	22	12							
31	16	8	---	---	34	28	---	---	56	32	---	---	76	45	72	52	---	---	40	18	---	---	20	10							
AV.	23	5	29	9	37	19	45	29	59	36	72	49	74	54	72	52	61	42	53	44	43	30	27	15							
MEAN	14.2		18.5		27.8		37.1		47.3		60.5		63.7		61.9		51.3		43.6		36.5		21.0								
STA AV	24	4	25	5	34	16	47	28	61	39	74	47	75	52	73	50	65	42	55	35	41	24	26								

Notes: TEMPERATURE DATA IS FROM R-12. READINGS TAKEN DAILY FROM HYDRO-THERMOGRAPH CHARTS, STA AV (STATION AVERAGE) BASED ON 1960-1966 RECORDS.

1967 DAILY AIR TEMPERATURE (degrees F)												NORTH DANVILLE, VERMONT												WATERSHED W-1												67.01	
DAY	JAN		FEB		MAR		APR		MAY		JUNE		JULY		AUG		SEPT		OCT		NOV		DEC														
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN													
1	22	12	30	12	13	5	74	31	74	32	78	30	85	53	76	49	58	27	56	42	64	32	17	0													
2	26	18	28	12	20	-4	72	30	63	36	84	50	86	58	76	40	52	34	64	36	55	44	22	-4													
3	25	16	18	-4	42	20	60	21	41	30	91	44	77	52	74	60	60	41	83	34	56	33	32	22													
4	31	25	26	-4	32	-8	37	12	55	25	92	49	74	44	78	62	62	36	66	44	49	32	22	18													
5	30	20	34	8	24	-10	58	30	52	31	89	52	68	47	76	51	68	48	63	48	38	23	32	18													
6	20	2	8	-12	30	21	38	30	52	25	88	50	70	46	72	48	65	35	48	29	32	18	32	5													
7	24	2	6	-14	29	13	34	28	52	20	84	51	80	38	78	42	68	27	45	20	33	16	26	18													
8	35	24	14	-15	30	0	49	26	42	30	62	47	80	51	76	43	83	42	45	18	30	16	32	26													
9	29	8	25	0	40	-6	58	19	49	32	87	46	74	62	72	60	77	54	58	44	26	9	32	16													
10	25	10	30	8	58	18	46	22	40	35	81	58	80	57	76	52	54	35	58	49	32	12	20	8													
11	24	10	33	0	60	30	28	12	50	30	79	50	82	50	62	46	64	30	52	41	39	8	28	10													
12	21	7	0	-14	30	8	32	10	46	34	76	56	82	54	72	44	74	28	48	34	46	36	40	28													
13	34	20	12	-22	40	6	65	12	53	29	73	55	78	51	76	50	76	34	42	22	40	19	42	32													
14	34	20	28	-12	40	26	67	27	61	27	62	53	82	49	74	52	78	28	43	22	20	12	32	23													
15	36	17	38	21	36	22	42	33	43	39	80	48	74	55	80	47	80	37	59	40	22	9	23	11													
16	17	0	38	4	22	6	33	32	45	30	88	62	74	54	84	52	84	48	57	43	16	-4	18	10													
17	32	4	10	-4	11	-6	38	32	62	28	83	63	78	52	86	54	84	44	66	51	22	-2	26	14													
18	22	-11	13	-10	5	-10	36	32	54	32	70	51	78	52	84	54	74	50	64	53	28	20	30	16													
19	10	-18	16	-9	30	-20	40	32	69	42	71	41	79	51	74	58	68	32	62	28	29	20	38	30													
20	24	0	21	-7	33	8	47	30	62	43	64	40	84	54	78	60	71	27	41	23	21	10	37	22													
21	38	10	26	12	36	1	57	28	55	32	74	53	84	58	75	54	68	54	49	22	24	2	38	17													
22	38	28	27	7	35	25	45	36	57	29	68	58	82	57	77	48	62	40	41	32	28	2	42	24													
23	40	28	28	20	43	21	44	35	63	29	83	62	78	54	69	40	48	38	53	22	34	26	24	12													
24	47	28	20	6	36	20	42	32	66	28	84	53	86	60	73	34	50	25	62	23	32	12	12	4													
25	34	28	6	0	39	24	42	28	44	32	83	56	82	60	75	39	44	25	56	38	28	10	24	2													
26	34	26	17	2	55	26	55	22	44	32	73	48	76	53	77	46	66	24	55	36	38	20	30	-2													
27	30	23	30	-5	48	26	57	26	56	37	82	42	80	51	72	61	76	41	48	33	38	20	14	-12													
28	28	18	34	13	42	32	58	30	62	42	82	43	68	59	78	52	70	58	46	28	22	10	22	9													
29	18	9	---	---	44	32	57	34	62	35	78	44	82	58	78	48	71	64	34	23	16	6	20	12													
30	14	7	---	---	42	24	68	30	59	32	62	40	82	54	77	51	76	46	46	21	24	-4	20	-3													
31	18	0	---	---	56	28	---	---	61	38	---	---	80	50	75	34	---	---	47	23	---	---	18	-4													
AV.	28	13	22	0	36	12	49	27	55	32	78	50	79	53	75	49	68	38	54	33	33	16	27	12													
MEAN	20.2		10.9		23.9		38.0		43.4		64.1		66.0		62.4		53.1		43.3		24.2		19.8														
STA AV	20.4	5	23	4	35	15	47	28	60	38	74	47	76	53	73	50	65	42	55	35	40	23	26	10													

1965 DAILY PRECIPITATION (inches)						NORTH DANVILLE, VERMONT WATERSHED W-1 67.01						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	0.00	0.11	0.00	0.00	0.00	0.00	0.00	0.00	1.56	0.97	0.38	0.05
2	0.00	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.06	0.03	0.01
3	0.00	0.02	0.00	0.00	0.00	0.00	0.66	0.00	0.00	0.41	0.00	0.22
4	0.00	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.53
5	0.00	0.17	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
6	0.10	0.03	0.00	0.00	0.00	0.00	0.00	0.14	0.00	0.30	0.00	0.10
7	0.00	0.45	0.00	0.21	0.00	1.96	0.00	0.68	0.00	0.16	0.00	0.03
8	0.04	0.26	0.00	0.14	0.00	0.00	0.30	0.70	0.02	0.52	0.57	0.00
9	0.21	0.00	0.00	0.00	0.10	0.10	0.00	0.30	0.00	0.02	0.15	0.00
10	0.00	0.62	0.08	0.00	0.15	0.30	0.45	1.13	0.54	0.00	0.00	0.03
11	0.00	0.00	0.10	0.00	0.09	0.00	0.00	0.00	0.00	0.07	0.00	0.00
12	0.00	0.20	0.00	0.47	0.00	0.38	0.00	0.81	0.00	0.35	0.00	0.14
13	0.25	0.00	0.00	0.33	0.00	1.07	0.00	0.59	0.25	0.02	0.20	0.24
14	0.08	0.00	0.00	0.00	0.00	0.10	0.21	0.00	0.02	0.00	0.10	0.17
15	0.00	0.00	0.00	0.20	0.00	0.02	0.00	0.00	0.20	0.54	0.00	0.09
16	0.00	0.00	0.00	0.38	0.00	0.05	0.00	0.00	0.04	0.00	0.67	0.11
17	0.10	0.00	0.00	0.07	0.12	0.00	0.08	0.00	0.00	0.00	1.63	0.06
18	0.00	0.34	0.05	0.09	0.00	0.29	1.42	0.80	0.15	0.00	0.15	0.07
19	0.00	0.05	0.14	0.00	0.00	0.00	0.05	0.30	0.19	0.00	0.00	0.15
20	0.25	0.06	0.04	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.03	0.00
21	0.00	0.00	0.02	0.25	0.00	0.05	0.00	0.00	0.00	0.00	0.30	0.10
22	0.05	0.03	0.24	0.10	0.10	0.01	0.00	0.00	0.00	0.15	0.02	0.04
23	0.00	0.04	0.05	0.08	0.00	0.51	0.00	0.18	0.10	0.62	0.00	0.00
24	0.49	0.00	0.00	0.00	0.00	0.12	0.05	0.00	1.09	0.07	0.00	0.37
25	0.06	0.60	0.00	0.00	0.00	0.00	0.00	0.00	0.56	0.00	0.10	0.29
26	0.35	0.05	0.28	0.23	0.00	0.00	0.00	1.08	0.00	0.02	0.27	0.09
27	0.15	0.00	0.17	0.05	0.05	0.00	0.06	0.03	0.00	0.05	0.78	0.00
28	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.61	0.00	0.18	0.12	0.00
29	0.04	-----	0.16	0.00	0.00	0.00	0.05	0.23	0.00	0.00	0.13	0.03
30	0.00	-----	0.05	0.00	0.00	0.01	0.00	0.02	0.00	0.02	0.04	0.00
31	0.00	-----	0.00	-----	0.15	-----	0.00	0.00	-----	0.19	-----	0.00
TOTAL	2.26	3.26	1.38	2.60	0.76	4.97	4.33	7.60	4.77	4.72	5.69	2.92
STAAV	2.98	3.48	3.29	3.80	3.32	4.00	3.95	4.64	2.97	4.52	4.63	3.14

Notes: PRECIPITATION VALUES ARE FOR R-1. ALL PRECIPITATION IS RAIN EXCEPT FOR THE MONTHS OF DECEMBER, JANUARY, AND FEBRUARY, DURING WHICH ALL PRECIPITATION IS SNOW OR RAIN ON SNOW.

1966 DAILY PRECIPITATION (inches)						NORTH DANVILLE, VERMONT WATERSHED W-1 67.01						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	0.00	0.03	1.33	0.05	0.07	0.00	0.00	0.00	0.00	0.05	0.00	0.20
2	0.02	0.00	0.47	0.10	0.02	0.00	0.00	0.61	0.00	0.00	0.00	0.15
3	0.30	0.00	0.09	0.05	0.17	0.00	0.00	0.03	0.00	0.00	1.08	0.03
4	0.00	0.03	0.15	0.02	0.27	0.16	0.12	0.00	0.81	0.20	0.00	0.00
5	0.00	0.07	0.86	0.09	0.07	0.24	0.00	0.00	0.00	0.23	0.05	0.02
6	0.10	0.02	0.37	0.01	0.43	0.05	0.08	0.00	0.07	0.05	0.07	0.05
7	0.02	0.00	0.10	0.12	0.02	0.03	0.09	0.04	0.00	0.00	0.04	0.14
8	0.57	0.00	0.00	0.53	0.00	0.37	0.00	0.23	0.00	0.00	0.10	0.41
9	0.00	0.00	0.00	0.17	0.76	0.20	0.00	0.00	0.00	0.00	0.00	0.00
10	0.00	0.00	0.04	0.03	0.06	0.97	0.48	0.00	0.00	0.32	0.11	0.03
11	0.12	0.18	0.00	0.25	0.01	0.00	0.00	0.50	0.00	0.05	0.33	0.52
12	0.00	0.00	0.25	0.00	0.22	0.00	0.35	0.29	0.00	0.23	0.00	0.00
13	0.00	0.82	0.30	0.00	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14	0.00	0.16	0.00	0.00	0.00	0.25	0.00	0.00	0.02	0.00	0.00	0.00
15	0.03	0.10	0.00	0.00	0.00	0.29	0.00	0.00	0.30	0.00	0.04	0.00
16	0.03	0.16	0.00	0.00	0.02	0.37	0.00	1.05	0.00	0.13	0.21	0.02
17	0.10	0.07	0.00	0.00	0.15	0.00	0.00	0.40	0.00	0.02	0.05	0.00
18	0.08	0.00	0.03	0.00	0.47	0.00	0.07	0.00	0.00	0.00	0.10	0.05
19	0.17	0.00	0.00	0.00	0.89	0.00	0.50	0.00	0.00	0.23	0.00	0.00
20	0.03	0.08	0.10	0.00	0.15	0.06	0.00	0.00	0.00	1.04	0.00	0.00
21	0.00	0.10	0.00	0.20	0.00	0.02	0.09	0.00	0.34	0.05	0.00	0.00
22	0.00	0.02	0.00	0.00	0.00	0.00	0.03	0.52	1.26	0.00	0.00	0.00
23	0.44	0.05	0.00	0.00	0.00	0.00	0.00	0.57	0.58	0.00	0.00	0.00
24	0.17	0.00	0.35	0.19	0.00	0.00	0.00	0.03	0.05	0.00	0.00	0.46
25	0.00	1.00	0.60	0.00	0.00	0.21	0.00	0.05	0.11	0.00	0.20	0.65
26	0.00	0.11	0.03	0.00	0.00	0.00	0.58	0.08	0.00	0.00	0.00	0.09
27	0.17	0.00	0.10	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00
28	0.00	0.00	0.09	0.00	0.00	0.00	0.13	0.00	0.00	0.00	0.00	0.00
29	0.00	-----	0.00	0.05	0.00	0.62	0.31	0.00	0.15	0.11	0.12	0.90
30	0.40	-----	0.00	0.10	0.00	0.00	0.00	0.64	0.07	0.00	0.42	0.21
31	0.10	-----	0.00	-----	0.00	-----	0.00	0.06	-----	0.00	-----	0.00
TOTAL	2.85	3.00	5.26	1.96	4.18	3.84	2.83	5.20	3.76	2.71	2.92	3.93
STAAV	2.97	3.42	3.53	3.57	3.43	3.98	3.81	4.71	3.07	4.30	4.42	3.24

Notes: PRECIPITATION VALUES ARE FOR R-1. ALL PRECIPITATION IS RAIN EXCEPT FOR THE MONTHS OF DECEMBER, JANUARY, AND FEBRUARY, DURING WHICH ALL PRECIPITATION IS SNOW OR RAIN ON SNOW.

1967 DAILY PRECIPITATION (inches)						NORTH DANVILLE, VERMONT WATERSHED W-1 67.61						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	0.09	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.33	0.00	0.00
2	0.05	0.30	0.00	0.10	0.15	0.00	0.00	0.00	0.22	0.00	0.24	0.00
3	0.00	0.00	0.13	0.14	0.85	0.00	0.55	0.10	0.06	0.00	0.15	0.42
4	0.15	0.07	0.02	0.00	0.15	0.00	0.00	0.62	0.25	0.00	0.26	0.02
5	0.34	0.05	0.18	0.00	0.15	0.00	0.00	0.00	0.00	0.64	0.00	0.04
6	0.00	0.00	0.05	0.41	0.00	0.00	0.00	0.00	0.00	0.08	0.00	0.00
7	0.06	0.00	0.25	0.30	0.27	0.26	0.00	0.00	0.00	0.00	0.00	0.00
8	0.00	0.00	0.00	0.01	0.30	0.18	0.00	0.00	0.00	0.02	0.00	0.16
9	0.00	0.00	0.00	0.00	0.13	0.08	0.64	0.25	0.26	0.21	0.00	0.01
10	0.00	0.00	0.00	0.58	0.08	0.05	0.00	0.04	0.67	1.20	0.00	0.00
11	0.07	0.11	0.00	0.00	0.35	0.68	0.00	0.00	0.00	0.09	0.00	0.00
12	0.13	0.00	0.00	0.00	0.00	0.00	0.85	0.00	0.00	0.00	0.24	1.85
13	0.03	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.26	0.00
14	0.06	0.00	0.08	0.00	0.04	0.17	0.00	0.00	0.00	0.04	0.10	0.00
15	0.12	0.00	0.03	0.47	0.25	0.40	0.00	0.00	0.00	0.01	0.55	0.16
16	0.02	0.52	0.12	0.13	0.07	0.14	0.69	0.00	0.00	0.00	0.00	0.05
17	0.00	0.00	0.00	0.40	0.13	0.31	0.00	0.00	0.00	0.05	0.12	0.03
18	0.00	0.00	0.00	0.30	0.15	0.04	0.00	0.00	0.00	1.67	0.13	0.02
19	0.00	0.00	0.00	0.00	0.63	0.00	0.00	0.14	0.00	0.09	0.18	0.05
20	0.00	0.22	0.00	0.00	0.05	0.00	0.00	0.10	0.00	0.08	0.17	0.00
21	0.00	0.31	0.00	0.00	0.05	0.00	0.45	0.00	0.00	0.06	0.08	0.00
22	0.00	0.00	0.03	0.30	0.15	0.60	0.00	0.15	0.66	0.09	0.15	0.03
23	0.08	0.82	0.00	0.55	0.00	0.00	0.04	0.00	0.00	0.00	0.79	0.02
24	0.00	0.10	0.00	0.03	0.00	0.00	0.33	0.00	0.49	0.00	0.05	0.00
25	0.00	0.10	0.00	0.00	0.22	0.25	0.65	0.00	0.19	0.00	0.01	0.05
26	0.00	0.02	0.00	0.00	1.33	0.00	0.00	0.00	0.00	1.05	0.10	0.18
27	0.49	0.00	0.10	0.00	0.00	0.00	0.00	0.80	0.00	0.00	0.04	0.00
28	0.32	0.20	0.05	0.00	0.00	0.00	0.32	0.55	0.01	0.00	0.23	0.40
29	0.17	-----	0.00	0.00	0.00	0.00	0.00	0.00	0.40	0.00	0.10	0.96
30	0.07	-----	0.00	0.00	0.00	0.00	0.00	0.55	0.25	0.00	0.02	0.00
31	0.00	-----	0.00	-----	0.00	-----	0.25	0.12	-----	0.00	-----	0.07
TOTAL	2.25	2.89	1.06	3.72	5.50	3.16	4.77	3.42	3.46	5.71	3.97	4.52
STAAV	2.89	3.36	3.26	3.59	3.66	3.89	3.92	4.57	3.11	4.45	4.37	3.38

Notes: PRECIPITATION VALUES ARE FOR R-1. ALL PRECIPITATION IS RAIN EXCEPT FOR THE MONTHS OF DECEMBER, JANUARY, AND FEBRUARY, DURING WHICH ALL PRECIPITATION IS SNOW OR RAIN ON SNOW.

1965 MEAN DAILY DISCHARGE (cfs)						NORTH DANVILLE, VERMONT WATERSHED W-1 67.01						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	13.52	28.97	6.95	6.99	35.46	6.78	2.88	1.82	51.67	37.00	27.47	24.71
2	12.34	18.41	6.33	7.78	29.43	4.70	2.67	1.82	76.69	45.70	20.22	23.32
3	16.40	7.56	11.04	7.70	24.55	4.07	5.84	1.82	18.54	25.24	18.42	22.28
4	13.79	5.65	26.75	8.59	24.13	3.78	7.61	1.75	10.24	35.68	22.02	49.72
5	13.48	5.34	71.58	11.14	20.15	3.33	5.75	1.41	7.30	21.20	18.57	43.63
6	14.24	5.03	92.56	16.93	17.91	3.13	18.14	1.41	6.02	16.72	16.80	29.29
7	12.86	4.75	82.14	18.26	16.26	26.88	5.61	2.71	4.92	15.52	17.08	18.62
8	13.96	28.98	74.60	17.38	15.49	70.08	6.72	5.42	4.60	51.61	26.95	16.89
9	20.65	48.03	44.57	22.34	16.11	18.01	5.15	6.76	4.49	44.65	91.42	15.66
10	22.15	36.21	30.62	47.25	18.29	16.52	4.97	19.03	12.08	24.55	30.60	19.07
11	14.58	21.53	21.79	56.44	17.91	12.99	4.39	8.59	7.84	19.51	23.75	14.80
12	14.26	13.42	16.79	68.07	14.54	7.79	3.33	4.17	5.24	32.35	22.36	14.98
13	14.26	11.80	15.43	70.57	12.32	113.63	2.78	41.41	5.46	26.23	27.12	14.98
14	14.16e	9.25	14.27	62.83	10.95	51.86	2.79	10.25	8.34	19.02	29.61	16.26
15	13.48e	8.34	12.64	72.53	9.98	26.63	3.13	5.22	8.47	33.88	19.73	17.01
16	13.48e	7.92	11.56	127.37	9.98	15.86	2.61	3.58	13.35	79.80	39.46	17.01
17	13.48e	7.08	11.57	65.76	14.95	12.70	2.37	3.10	7.97	29.01	178.91	17.17
18	13.48e	6.95	11.16	46.55	20.04	12.95	31.84	11.96	6.89	21.72	64.90	16.26
19	13.48e	6.42	10.75	46.30	13.97	9.90	16.12	12.50	10.03	19.26	39.83	13.66
20	13.48e	5.99	9.84	57.37	11.72	7.56	6.40	10.62	12.12	17.87	34.34	9.09
21	13.48e	5.99	8.59	75.23	9.18	6.02	4.65	5.15	8.92	16.26	31.35	14.32
22	13.48e	5.99	7.89	110.63	8.56	5.57	3.74	3.96	6.48	15.62	32.20	14.20
23	13.48e	5.46	8.30	58.30	8.12	5.12	3.29	3.64	5.03	63.55	31.77	12.52
24	14.02e	4.55	8.07	39.83	7.07	10.83	3.21	3.42	11.51	52.27	28.48	13.48
25	15.51e	5.33	7.91	35.17	6.31	6.30	2.98	3.21	111.25	29.06	25.36	15.70
26	17.55e	18.20	8.24	38.09	5.78	4.57	2.49	3.82	26.06	22.36	25.03	19.15
27	17.90e	19.65	7.92	53.61	5.46	3.97	2.21	23.08	14.35	21.08	39.16	15.29
28	14.06	8.05	8.25	42.69	5.61	3.57	2.22	26.72	10.91	21.08	36.13	15.19
29	12.52	-----	7.63	41.35	4.61	3.12	2.25	14.95	9.84	19.04	29.53	14.86
30	19.69	-----	7.70	39.26	4.49	3.07	2.19	10.09	8.99	17.64	25.78	13.91
31	23.71	-----	7.38	-----	4.76	-----	1.93	6.63	-----	24.88	-----	15.41
MEAN	15.06	12.89	21.64	45.41	13.68	16.04	5.56	8.39	16.52	29.66	35.81	18.66
INCHES	1.047	.809	1.505	3.656	.951	1.080	.386	.583	1.112	2.06	2.409	1.298

Notes: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .0022433. RECORDS ARE GOOD.

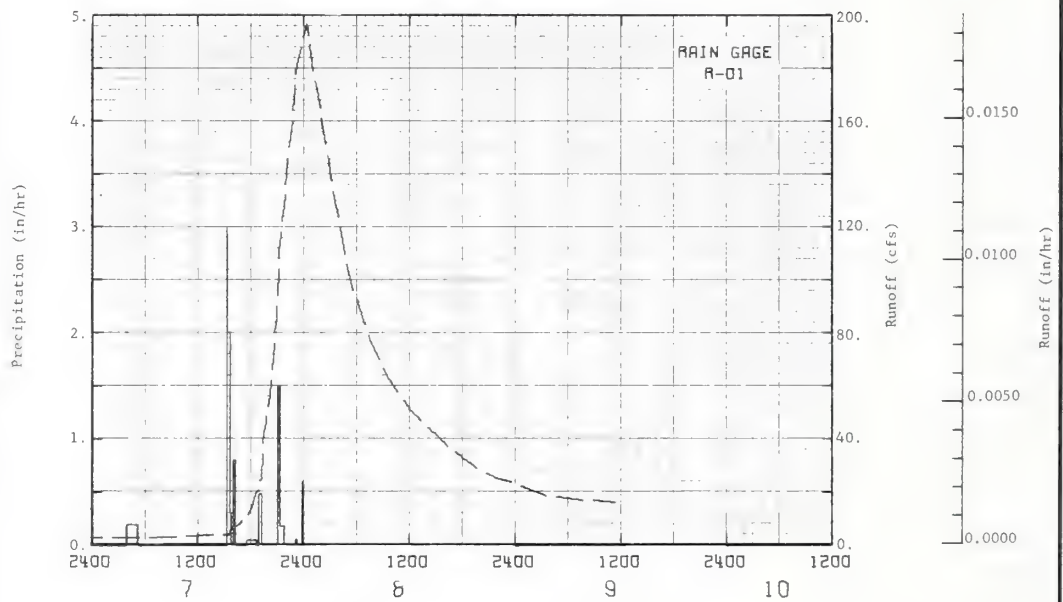
1966 MEAN DAILY DISCHARGE (cfs)						NORTH DANVILLE, VERMONT WATERSHED W-1 67.01						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	35.14	6.74	22.00	29.95	75.93	12.94	4.98	2.22	3.28	3.85	4.36	15.63
2	34.24	6.63	59.83	28.67	52.31	11.61	4.14	2.22	2.59	3.42	4.60	10.57
3	21.44	6.15	43.15	27.70	42.37	10.90	3.58	3.45	2.35	3.21	36.70	6.05
4	16.78	5.99	28.81	28.45	56.57	9.66	3.19	2.82	9.10	3.21	23.26	6.16
5	15.94	5.99	66.83	28.98	44.24	11.97	2.92	2.15	10.43	4.72	11.25	5.16
6	15.94	5.99	106.40	32.82	71.67	26.47	2.89	1.91	4.52	5.96	9.95	7.05
7	15.19	5.99	60.62	40.79	60.92	13.53	4.10	1.79	3.58	4.83	10.23	7.34
8	13.05	5.51	36.66	47.29	39.69	13.85	3.69	2.12	3.17	4.05	10.33	21.54
9	13.04	5.14	28.47	48.53	56.31	16.16	3.04	1.98	2.88	3.40	11.02	35.27
10	12.84	5.27	27.28	52.80	60.87	85.08	3.02	1.71	2.52	3.55	9.49	46.65
11	11.66	14.27	21.82	63.76	47.99	43.47	6.86	2.51	2.23	5.00	23.16	74.62
12	10.27	35.84	19.26	59.20	45.99	20.50	5.12	3.96	2.14	4.41	13.79	24.86
13	9.31	23.62	19.26	58.08	95.27	13.86	5.58	3.39	2.11	4.33	9.80	11.75
14	9.31	26.34	18.40	90.48	54.44	11.74	3.65	2.59	2.43	3.96	7.73	12.99
15	9.09	17.09	15.83	108.21	40.88	14.47	2.61	2.15	2.83	3.60	7.24	9.81
16	8.56	13.44	14.76	102.33	36.76	30.48	2.21	2.44	3.14	3.65	5.94	6.00
17	8.24	12.73	16.48	114.08	38.16	27.41	2.06	20.38	2.57	3.99	7.81	10.65
18	8.24	11.05	20.50	111.09	33.29	12.62	2.13	5.45	2.41	3.66	14.56	10.78
19	8.24	9.59	30.71	116.11	186.68	9.15	3.26	3.16	2.27	3.73	13.14	5.30
20	8.24	9.31	36.47	96.09	101.96	8.16	5.63	2.50	2.06	47.34	6.36	4.23
21	8.56	9.31	42.33	128.06	58.43	7.37	3.03	2.22	1.93	22.24	5.12	6.47
22	8.77	9.52	45.40	172.89	40.20	6.52	2.73	2.97	23.28	12.79	5.13	6.78
23	8.56	9.52	62.39	116.36	32.41	5.67	2.38	10.67	26.71	8.61	5.06	5.64
24	8.56	9.31	92.35	110.61	29.98	5.19	2.26	13.32	11.23	6.97	6.02	4.46
25	8.45	10.00	231.90	106.70	13.16	6.66	2.09	7.09	7.12	5.56	7.84	7.09
26	8.24	11.02	83.88	80.62	22.39	7.33	4.48	5.67	5.03	4.91	14.58	10.38
27	7.70	11.66	49.28	58.33	19.92	5.94	3.56	4.43	4.09	4.81	11.64	11.29
28	7.49	13.16	40.78	46.04	18.92	4.77	2.76	3.48	3.66	4.60	10.54	10.08
29	7.14	-----	33.39	42.48	16.75	7.02	4.83	2.69	3.51	4.52	11.70	10.71
30	7.22	-----	30.73	48.10	11.26	9.94	3.28	2.63	4.03	4.48	16.24	11.38
31	7.22	-----	32.88	-----	13.22	-----	2.59	5.07	-----	4.18	-----	10.64
MEAN	12.02	11.29	46.41	73.19	49.00	15.68	3.50	4.23	5.31	6.69	11.15	13.78
INCHES	.836	.709	3.23	4.925	3.407	1.055	.243	.294	.357	.466	.751	.959

Notes: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .0022433.

1967 MEAN DAILY DISCHARGE (cfs)						NORTH DANVILLE, VERMONT WATERSHED W-1 67.01						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	10.40	6.21	3.56	62.45	49.49	23.63	5.84	12.48	9.28	8.51	12.93	9.88
2	9.25	6.01	3.32	137.52	51.88	21.54	5.14	6.23	6.01	10.30	12.57	10.35
3	8.37	5.94	3.32	209.49	181.05	19.73	7.95	5.01	5.27	6.93	34.16	14.53
4	7.92	5.83	3.32	81.93	89.23	17.71	8.59	13.83	5.07	5.08	28.89	16.99
5	7.81	5.88	3.21	53.92	70.20	26.47	5.50	13.23	6.84	5.37	31.77	13.88
6	7.27	5.30	3.32	52.18	48.78	13.22	4.81	6.41	5.08	9.65	19.62	11.95
7	7.34	5.24	3.32	39.05	38.84	11.98	4.38	5.03	4.03	7.01	16.15	12.44
8	6.91	5.03	3.26	35.70	53.86	15.90	4.10	4.08	3.53	5.36	15.08	13.03
9	7.01	4.91	3.21	46.16	62.22	21.33	4.43	3.97	3.35	5.37	12.70	13.64
10	7.27	4.87	3.45	153.24	64.39	14.87	12.25	6.78	21.30	36.16	13.09	12.00
11	6.49	5.03	5.31	72.37	49.65	16.94	5.87	6.24	9.41	112.64	11.79	11.61
12	5.99	5.19	8.25	46.62	73.54	51.01	32.41	4.76	5.65	24.19	14.67	117.63
13	5.86	5.10	6.54	43.85	40.60	21.32	14.80	3.97	4.53	15.08	23.70	120.63
14	5.78	5.88	5.62	63.43	32.32	17.70	7.32	3.64	3.88	11.55	17.13	47.70
15	5.78	6.08	5.24	112.68	39.28	44.27	5.29	3.35	3.49	11.06	12.51	27.91
16	5.36	9.61	4.99	102.28	46.57	40.32	69.63	3.18	3.23	9.84	11.93	19.24
17	5.53	11.51	5.15	64.78	32.45	23.63	25.85	10.91	3.16	9.32	13.29	18.81
18	5.30	8.55	4.92	101.64	54.17	32.41	12.05	8.21	3.10	45.01	16.50	18.13
19	5.30	9.06	4.03	68.29	94.94	16.32	9.33	2.81	3.05	117.01	16.10	26.45
20	5.46	11.81	3.88	70.58	99.75	11.88	7.80	4.57	2.52	29.88	15.37	28.81
21	5.46	12.81	3.66	64.59	49.12	11.00	5.91	4.20	2.65	21.72	12.82	21.24
22	5.46	7.86	3.58	107.84	38.36	18.23	7.42	3.82	4.25	20.88	13.75	24.69
23	6.04	6.37	3.58	123.62	44.27	18.82	5.86	4.08	4.41	16.75	27.86	21.47
24	8.67	5.55	3.74	85.75	38.60	12.71	9.70	3.38	3.78	14.21	42.30	11.01
25	9.61	4.71	4.07	63.77	29.43	11.05	10.44	3.06	10.59	12.80	23.31	9.84
26	8.38	4.28	5.27	57.27	145.44	13.23	11.62	2.75	6.44	97.92	19.89	12.00
27	7.54	3.72	8.89	58.54	87.38	8.40	6.00	5.58	4.60	34.12	19.88	7.50
28	7.79	3.72	19.63	57.68	50.39	7.09	8.92	36.62	3.94	22.47	16.77	10.54
29	6.87	-----	27.53	54.23	37.93	6.01	11.44	9.18	4.24	17.52	13.85	11.01
30	6.55	-----	32.79	49.49	30.26	5.55	6.88	5.67	15.08	15.61	10.58	12.71
31	6.58	-----	36.96	-----	26.33	-----	7.93	12.37	-----	13.91	-----	13.41
MEAN	6.95	6.50	7.64	78.03	59.70	19.14	11.14	7.08	5.73	24.94	18.37	23.26
INCHES	.483	.408	.531	5.251	4.142	1.288	.775	.492	.385	1.735	1.236	1.617

Notes: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .0022433.

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.0000935. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 67.1-4. FOR 30-DAY ANTECEDENT RAINFALL AND RUNOFF SEE P. 67.1-3, AND 4. 1/ RUNOFF PRIOR TO 0302 ON 6-7-65.

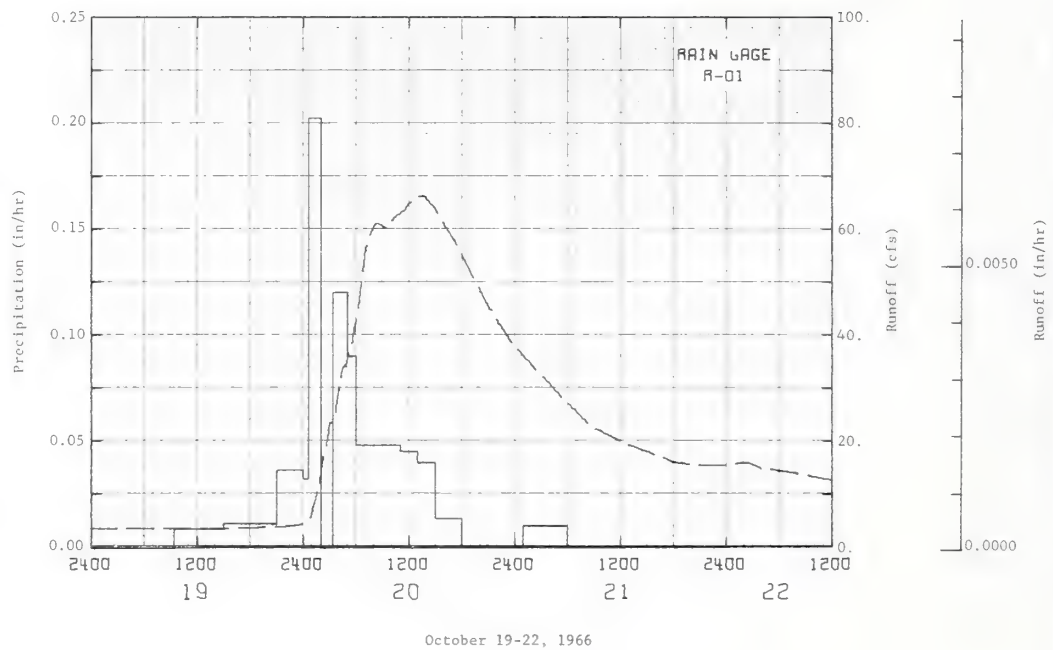


June 7-9, 1965

NORTH DANVILLE, VERMONT WATERSHED W-1

1966 SELECTED RUNOFF EVENT			NORTH DANVILLE, VERMONT				WATERSHED 6-1			
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)
Event of October 19-22, 1966										
10-19	RG R-1 .00	1/.002	10-19	RG	R-1		10-19	0600	3.531	.0000
				0919	.0000	.00		1200	3.531	.0020
				1500	.0099	.05		1330	3.638	.0025
				2100	.0117	.12		1759	3.745	.0041
				2400	.0367	.23		1929	3.059	.0044
			10-20	0037	.0324	.25				
				0200	.2024	.53		2114	4.045	.0053
				0321	.0000	.53		2245	4.290	.0059
				0501	.1200	.73		2400	4.601	.0064
				0601	.0900	.82	10-20	0033	4.815	.0066
				1100	.0492	1.06		0047	5.243	.0067
				1300	.0450	1.15		0110	8.239	.0069
				1500	.0400	1.23		0117	8.560	.0070
				1759	.0134	1.27		0147	11.235	.0075
			10-21	0100	.0000	1.27		0205	14.872	.0079
				0601	.0100	1.32		0218	17.012	.0082
								0241	19.259	.0088
								0301	23.646	.0095
								0322	23.646	.0103
								0339	24.288	.0109
								0347	28.675	.0112
								0356	28.675	.0116
								0419	32.634	.0127
								0431	34.239	.0133
								0446	34.239	.0141
								0537	38.733	.0170
								0543	41.515	.0174
								0555	41.515	.0182
								0707	56.387	.0237
								0733	58.741	.0260
								0745	60.025	.0271
								0815	61.202	.0289
								0927	60.025	.0367
								1029	62.486	.0424
								1129	63.770	.0494
								1200	65.054	.0516
								1332	66.338	.0610
								1500	63.770	.0609
								1759	55.210	.0865
								2100	45.473	.1007
								2400	37.770	.1124
							10-21	0559	27.177	.1306
								0900	22.362	.1376
								1200	19.794	.1435
								1459	18.082	.1488
								1759	15.042	.1536
								2050	15.407	.1580
								2400	15.407	.1623
							10-22	0117	15.942	.1642
								0232	15.042	.1661
								0347	14.872	.1679
								0601	14.444	.1710
								0903	13.492	.1750
								1200	12.510	.1786

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.0000935. FOR 30-DAY ANTECEDENT RAINFALL AND RUNOFF, SEE P. 67.1-3, AND 5. 1/ RUNOFF PRIOR TO 0600 ON 10-19-66.

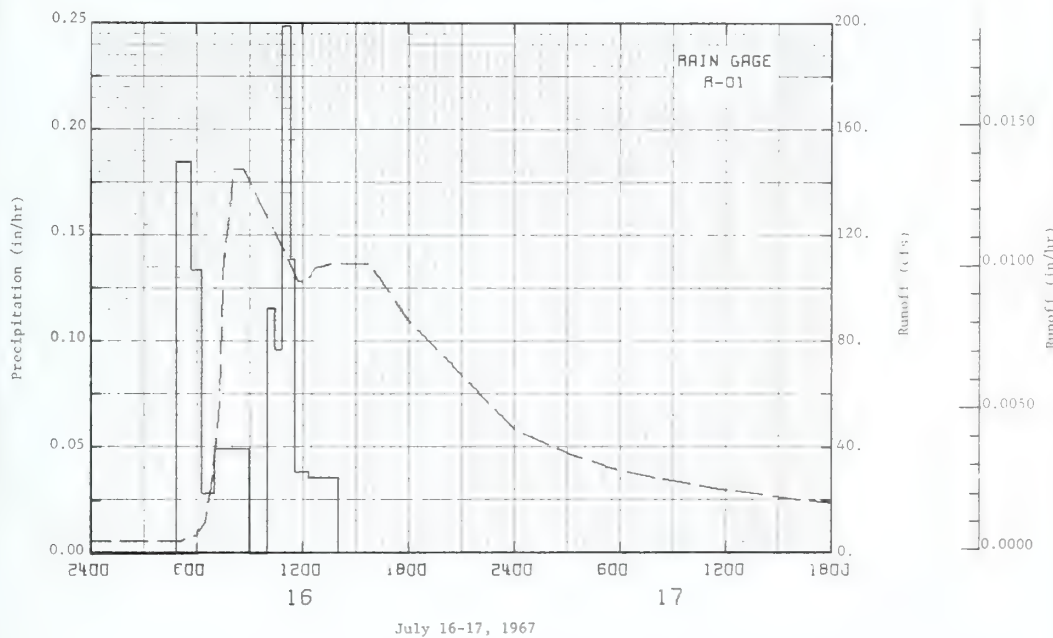


NORTH DANVILLE, VERMONT WATERSHED W-1

1967 SELECTED RUNOFF EVENT			NORTH DANVILLE, VERMONT				WATERSHED W-1				47.01
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)	
7-16	RG R-1 .00	1/.002	7-16	Event of July 16-17, 1967			7-16	0501	4.815	.0000	
				RG	R-1			0600	7.276	.0076	
				0450	.0000	.00		0629	12.091	.0010	
				0542	.1844	.16		0650	25.037	.0016	
				0618	.1333	.24		0720	47.644	.0035	
				0700	.0286	.26					
				0901	.0404	.34					
				1001	.0000	.34		0730	105.819	.0048	
				1027	.1154	.41		0807	144.450	.0120	
				1052	.0960	.45		0843	144.450	.0201	
				1121	.2483	.57		1147	177.395	.0555	
				1134	.1385	.60		1216	172.395	.0501	
				1221	.0383	.63		1245	107.531	.0648	
				1402	.0356	.69		1332	170.350	.0727	
								1546	109.350	.0955	
								1901	87.630	.1162	
			2400	46.543	.1537						
			7-17	0257	37.770	.1653					
				0559	30.922	.1750					
				0850	27.177	.1832					
				1200	23.646	.1904					
				1900	18.617	.2023					
				2400	14.872	.2117					

Watershed conditions: 64%
forest land, 16% hay, 15%
pastured land, 3% idle land
with dense grass and brush
growth, 1% seeded to corn,
1% homesites.

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.0000935. FOR 30-DAY ANTECEDENT RAINFALL AND RUNOFF SEE P. 67.1-4 AND 5. 1/ RUNOFF PRIOR TO 0501 ON 7-16-67.

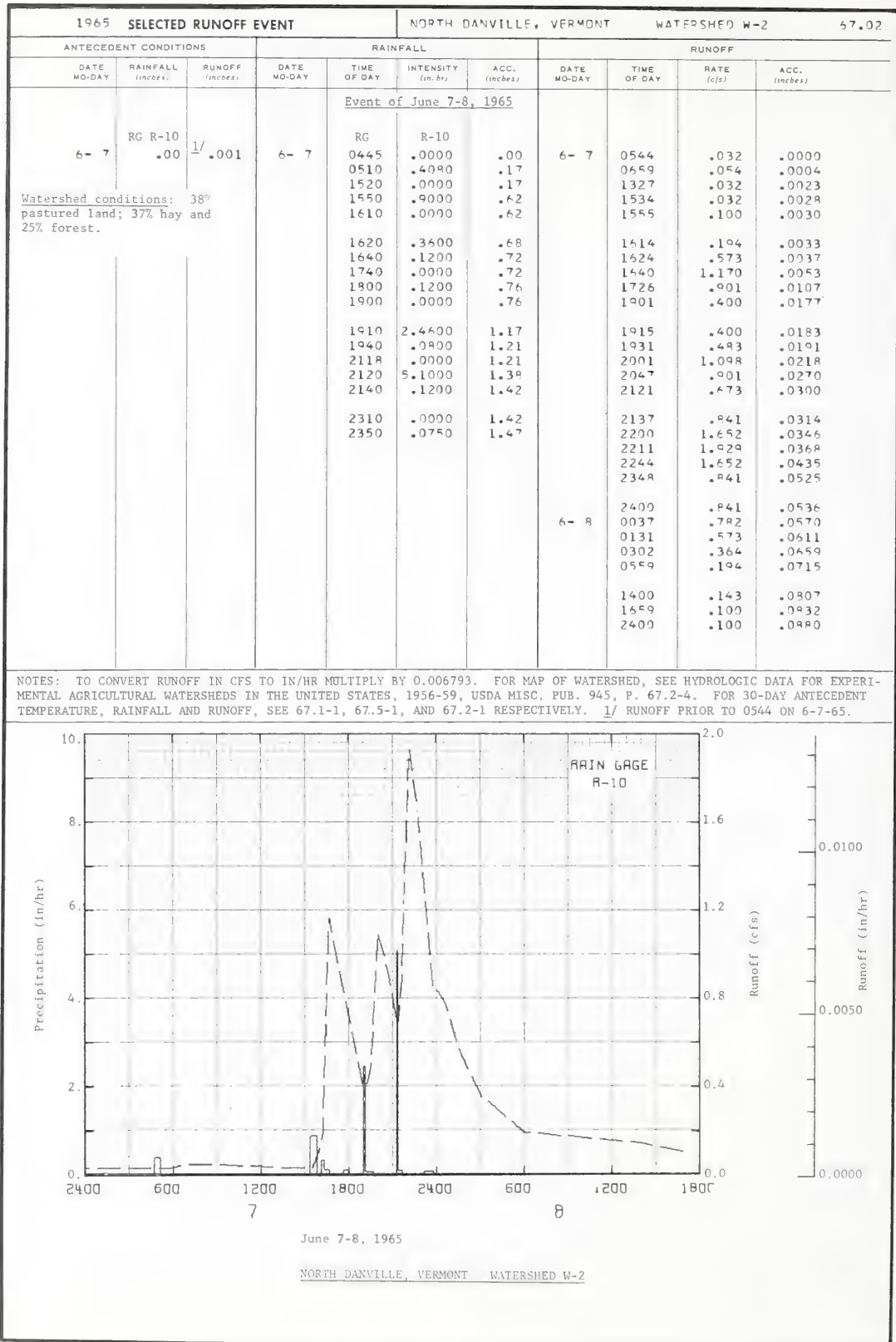


NORTH DANVILLE, VERMONT WATERSHED W-1

MONTHLY PRECIPITATION AND RUNOFF (inches) ^{1/}						NORTH DANVILLE, VERMONT AREA—146 ACRES						WATERSHED W-2		67.02		
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1965	P	1.46	2.32	.69	2.06	.80	4.97	3.65	6.07	4.05	4.01	4.51	1.86	36.45		
	Q	.49	.99	2.88	1.54	.55	.66	.42	.39	.65	1.14	1.77	1.57	13.05		
1966	P	1.41	2.09	3.99	1.09	3.64	3.43	2.44	3.66	2.90	2.09	2.56	2.81	32.11		
	Q	.92	.86	3.33	2.93	2.03	1.28	.85	.37	.36	.41	.53	.58	14.45		
1967	P	1.25	1.82	.60	3.93	5.45	2.77	4.86	3.04	2.47	4.88	2.29	3.51	36.87		
	Q	.53	.40	1.46	3.20	2.76	1.40	1.00	.57	.36	.88	.93	1.15	14.39		
STA AV ^{2/} (58-67)	P	1.99	2.21	2.25	2.85	2.89	3.12	3.32	3.94	2.60	3.75	3.40	2.53	34.85		
	Q	.76	.70	1.93	3.66	1.99	.97	.57	.42	.35	.72	1.12	1.21	14.40		
MEAN P ^{3/} 73 YR		2.57	2.19	2.44	2.82	3.23	3.77	3.47	3.27	3.48	3.06	3.15	2.59	35.99		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1965	3-7	.04	3-7	.04	3-7	.08	3-7	.20	3-7	.32	3-7	.43	3-6	.78	3-7	2.00
1966	3-25	.04	3-25	.04	3-25	.08	3-25	.22	3-25	.35	3-25	.53	3-24	.73	3-23	1.54
1967	4-3	.04	4-3	.04	4-3	.07	4-1	.18	4-1	.30	4-1	.43	4-1	.75	3-28	2.10
MAXIMUMS FOR PERIOD OF RECORD																
19 58 to 19 67	3-5 1964	.08	3-5 1964	.08	3-5 1964	.16	3-5 1964	.39	3-5 1964	.58	3-6 1964	.83	3-30 1962	1.14	3-28 1962	2.54
Notes: Watershed conditions: Pasture of mostly bluegrass, 38%; cultivated land entirely in clover and orchard grass hay, 37%; and forest stand, predominantly hardwoods, 25%. ^{1/} Precipitation records from Rain Gage R-10. ^{2/} Precipitation records began on Sept. 1958, Runoff began Oct. 1958, part year values not included in Sta Av. ^{3/} Mean P based on 73-yr (1895-1967) U.S. Weather Bureau record period at St. Johnsbury, Vt.																
1965 MEAN DAILY DISCHARGE (cfs)						NORTH DANVILLE, VERMONT						WATERSHED W-2		67.02		
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC				
1	.14	.08	.14	.16	.13	.09	.03	.02	.53	.34	.25	.35				
2	.14	.07	.14	.14	.11	.06	.03	.02	.28	.22	.22	.34				
3	.12	.07	.45	.24	.12	.05	.14	.02	.09	.18	.24	.35				
4	.11	.08	1.67	.21	.13	.05	.09	.02	.07	.13	.24	.72				
5	.12	.08	2.24	.29	.12	.04	.11	.01	.06	.12	.21	.46				
6	.11	.07	2.14	.35	.11	.04	.18	.01	.05	.12	.22	.38				
7	.10	.08	2.57	.28	.12	.34	.05	.05	.05	.12	.22	.33				
8	.10	1.06	1.91	.30	.11	.21	.09	.07	.06	.32	.52	.31				
9	.19	1.08	.83	.33	.13	.17	.06	.08	.05	.19	.45	.30				
10	.15	.35	.48	.52	.15	.15	.06	.18	.16	.14	.26	.33				
11	.12	.21	.38	.42	.13	.11	.05	.07	.07	.14	.25	.30				
12	.10	.18	.33	.62	.11	.12	.05	.05	.06	.26	.25	.29				
13	.10	.17	.33	.67	.11	1.02	.04	.33	.10	.17	.33	.31				
14	.10	.17	.33	.48	.10	.28	.04	.07	.10	.14	.28	.33				
15	.10	.17	.28	.40	.10	.18	.03	.05	.14	.43	.23	.33				
16	.10	.16	.25	.53	.10	.14	.02	.04	.11	.28	.55	.33				
17	.08	.14	.22	.37	.29	.12	.03	.03	.08	.19	1.20	.33				
18	.07	.14	.21	.36	.18	.14	.79	.15	.08	.17	.40	.31				
19	.07	.14	.23	.27	.14	.11	.13	.18	.11	.17	.37	.29				
20	.07	.14	.21	.25	.12	.09	.08	.08	.10	.17	.35	.26				
21	.07	.13	.19	.24	.09	.09	.07	.05	.08	.16	.34	.26				
22	.07	.11	.17	.33	.10	.09	.06	.05	.07	.18	.37	.25				
23	.07	.10	.16	.22	.08	.07	.06	.04	.06	.56	.37	.24				
24	.07	.10	.16	.22	.06	.10	.06	.03	.29	.32	.36	.24				
25	.08	.17	.16	.20	.07	.06	.05	.03	.61	.22	.34	.28				
26	.07	.43	.17	.25	.09	.03	.04	.15	.13	.21	.31	.26				
27	.05	.22	.17	.27	.09	.03	.03	.15	.10	.23	.56	.23				
28	.06	.14	.55	.21	.07	.03	.04	.19	.09	.28	.43	.23				
29	.08	-----	.12	.17	.04	.03	.04	.08	.09	.38	.38	.23				
30	.08	-----	.16	.15	.04	.03	.03	.06	.09	.22	.36	.23				
31	.09	-----	.30	-----	.06	-----	.02	.05	-----	.23	-----	.25				
MEAN	.10	.22	.57	.32	.11	.14	.08	.08	.13	.23	.36	.31				
INCHES	.486	.985	2.876	1.541	.554	.664	.424	.393	.646	1.140	1.77	1.573				
Notes: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .1630258.																

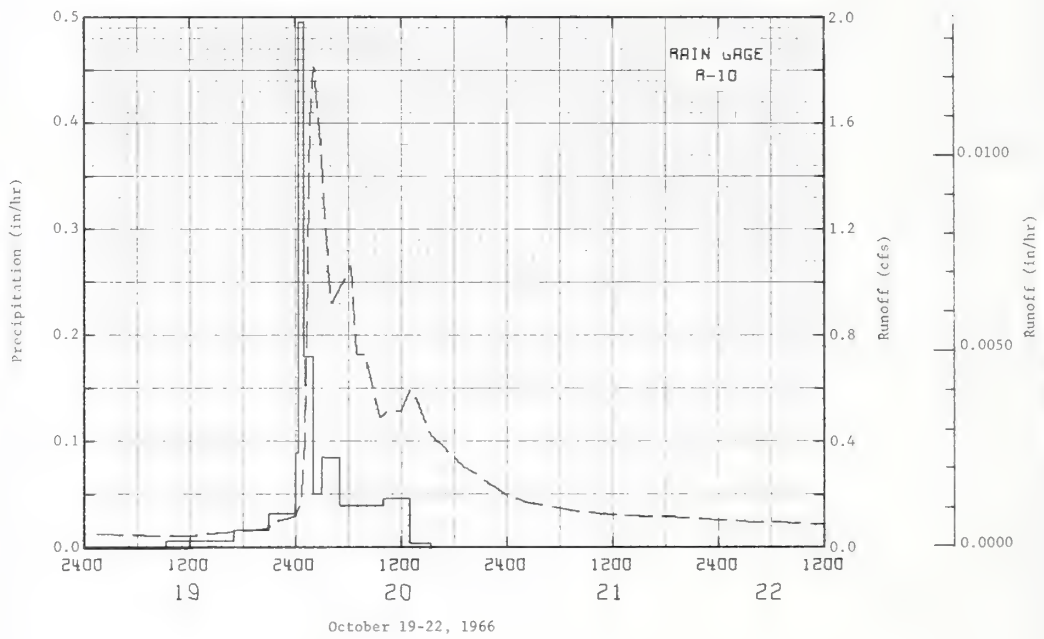
Cooperative Research Project of USDA, The Agricultural Experiment Station and the College of Technology, The University of Vermont, the Vermont Department of Water Resources and the U.S. Department of Commerce.

1966 MEAN DAILY DISCHARGE (cfs)						NORTH DANVILLE, VERMONT							67.02
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	
1	.34	.14	.63	.53	.33	.26	.12	.04	.04	.06	.06	.15	
2	.25	.14	.51	.53	.30	.25	.11	.06	.03	.05	.06	.11	
3	.23	.14	.24	.50	.32	.23	.94	.07	.03	.05	.38	.08	
4	.23	.14	.28	.52	.37	.23	.84	.05	.21	.06	.12	.06	
5	.21	.14	1.95	.56	.29	.34	.76	.05	.08	.11	.09	.06	
6	.21	.14	1.45	.65	.43	.49	.10	.03	.06	.08	.12	.08	
7	.21	.13	.46	.85	.32	.30	.13	.03	.05	.06	.10	.10	
8	.20	.12	.33	.79	.28	.31	.09	.03	.04	.05	.11	.27	
9	.19	.12	.34	.75	.61	.25	.08	.03	.04	.04	.10	.27	
10	.18	.12	.31	.80	.58	.93	.14	.03	.04	.07	.17	.27	
11	.18	.68	.28	.81	.46	.36	.18	.12	.03	.06	.09	.35	
12	.18	.50	.27	.83	.48	.25	.15	.12	.03	.06	.09	.14	
13	.18	.28	.26	.75	.65	.22	.11	.07	.03	.05	.08	.09	
14	.18	.34	.24	.90	.36	.22	.07	.04	.04	.06	.07	.11	
15	.17	.22	.23	.79	.32	.26	.07	.04	.06	.05	.07	.10	
16	.17	.20	.23	.73	.32	.52	.06	.09	.04	.05	.06	.08	
17	.17	.19	.22	.71	.37	.27	.05	.34	.03	.05	.09	.10	
18	.17	.16	.34	.62	.44	.20	.06	.07	.03	.05	.15	.12	
19	.17	.17	.45	.57	1.17	.18	.19	.04	.03	.06	.09	.07	
20	.17	.14	.53	.58	.58	.16	.12	.03	.03	.60	.07	.05	
21	.17	.13	.91	.55	.43	.15	.07	.03	.03	.13	.06	.06	
22	.17	.13	.84	.53	.38	.13	.07	.10	.52	.09	.05	.07	
23	.17	.13	1.13	.44	.35	.12	.06	.20	.23	.08	.05	.06	
24	.17	.13	1.57	.48	.32	.12	.05	.16	.10	.07	.06	.04	
25	.16	.13	2.82	.43	.31	.21	.04	.08	.08	.07	.41	.07	
26	.15	.13	.84	.37	.29	.16	.15	.07	.06	.06	.15	.08	
27	.14	.13	.67	.34	.29	.13	.07	.05	.06	.06	.12	.13	
28	.13	.13	.59	.34	.28	.11	.08	.04	.06	.07	.11	.12	
29	.13	-----	.54	.34	.27	.31	.12	.03	.05	.06	.12	.11	
30	.13	-----	.48	.41	.30	.18	.06	.07	.07	.06	.25	.10	
31	.13	-----	.46	-----	.26	-----	.05	.06	-----	.06	-----	.10	
MEAN	.18	.19	.66	.60	.40	.26	.17	.07	.07	.08	.11	.12	
INCHES	.919	.856	3.326	2.934	2.031	1.280	.846	.370	.364	.412	.530	.58	
Notes: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .1630258.													
1967 MEAN DAILY DISCHARGE (cfs)						NORTH DANVILLE, VERMONT							67.2
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	
1	.10	.11	.08	2.36	.39	.37	.11	.18	.10	.09	.12	.12	
2	.09	.10	.08	1.90	.38	.34	.10	.11	.08	.10	.12	.12	
3	.09	.10	.07	1.67	.94	.32	.28	.13	.08	.07	.19	.14	
4	.10	.10	.07	.67	.44	.31	.14	.18	.08	.06	.22	.15	
5	.10	.10	.07	.46	.52	.29	.13	.12	.11	.06	.17	.15	
6	.10	.09	.07	.44	.40	.30	.12	.10	.08	.12	.14	.14	
7	.10	.09	.07	.38	.38	.28	.11	.09	.06	.07	.12	.14	
8	.10	.08	.07	.45	.66	.34	.11	.08	.06	.06	.12	.16	
9	.10	.08	.07	.51	.53	.38	.19	.10	.06	.07	.12	.16	
10	.10	.09	.09	1.00	.62	.28	.25	.14	.04	.62	.13	.15	
11	.10	.09	.13	.41	.77	.46	.12	.10	.10	.44	.12	.14	
12	.10	.09	.15	.35	.85	.45	.47	.08	.08	.14	.17	.97	
13	.10	.08	.13	.34	.40	.28	.15	.08	.07	.11	.17	.51	
14	.10	.07	.11	.39	.37	.32	.12	.08	.06	.11	.13	.28	
15	.10	.07	.10	.62	.56	.48	.11	.07	.06	.11	.13	.22	
16	.10	.13	.10	.72	.45	.33	1.14	.06	.05	.10	.12	.20	
17	.10	.11	.09	.55	.42	.32	.23	.06	.05	.10	.12	.18	
18	.09	.09	.08	.78	.53	.30	.18	.06	.05	.58	.14	.19	
19	.09	.08	.07	.61	.89	.22	.16	.08	.05	.31	.14	.35	
20	.09	.07	.07	.46	.60	.21	.14	.13	.05	.15	.14	.30	
21	.09	.08	.07	.42	.45	.20	.12	.09	.05	.14	.20	.22	
22	.09	.08	.07	.71	.45	.31	.12	.10	.09	.13	.34	.31	
23	.10	.08	.07	.69	.54	.24	.11	.08	.07	.12	.54	.23	
24	.13	.08	.07	.49	.40	.19	.24	.06	.09	.11	.55	.17	
25	.15	.08	.08	.41	.98	.27	.15	.05	.13	.11	.37	.16	
26	.15	.08	.17	.39	.80	.20	.12	.05	.07	.62	.24	.18	
27	.13	.08	.56	.38	.52	.16	.10	.16	.06	.17	.20	.18	
28	.13	.08	1.53	.37	.46	.15	.24	.49	.06	.15	.16	.20	
29	.12	-----	1.43	.34	.43	.14	.15	.10	.08	.13	.14	.21	
30	.11	-----	1.39	.34	.41	.13	.11	.09	.16	.12	.13	.21	
31	.11	-----	1.72	-----	.40	-----	.33	.17	-----	.12	-----	.22	
MEAN	.11	.09	.29	.65	.55	.29	.20	.11	.07	.17	.19	.23	
INCHES	.531	.401	1.456	3.197	2.762	1.397	1.003	.566	.364	.879	.929	1.149	
Notes: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .1630258.													



1966 SELECTED RUNOFF EVENT			NORTH DANVILLE, VERMONT				WATERSHED #2			
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)
Event of October 19-22, 1966										
10-19	RG R-1 .00	1/.001	10-19	RG	R-10		10-19			
				0921	.0000	.00		0200	.052	.0000
				1659	.0044	.05		0759	.044	.0020
				2059	.0175	.12		1200	.044	.0032
				2400	.0331	.22		1300	.052	.0035
			10-20	0020	.0200	.25		1540	.059	.0045
Watershed conditions: 38% pastured land; 27% hay and 25% forest.				0100	.4050	.58		2000	.072	.0064
				0200	.1800	.76		2059	.070	.0069
				0259	.0508	.81		2119	.097	.0071
				0459	.0850	.99		2400	.125	.0091
				1000	.0399	1.18	10-20	0040	.171	.0058
				1300	.0467	1.32		0105	.403	.0106
				1520	.0043	1.33		0125	.002	.0122
								0138	1.543	.0141
								0158	1.762	.0179
								0212	1.814	.0207
								0257	1.477	.0201
								0358	.957	.0375
								0409	.022	.0397
								0517	.992	.0461
								0623	1.064	.0538
								0658	.730	.0574
								0759	.730	.0624
								0938	.492	.0693
								1032	.515	.0724
								1200	.515	.0775
								1259	.592	.0812
								1320	.592	.0826
								1519	.424	.0894
								1859	.308	.0995
								2400	.197	.1071
							10-21	0159	.171	.1026
								0759	.137	.1159
								1200	.125	.1155
								1420	.116	.1230
								2400	.106	.1288
							10-22	0359	.097	.1315
								1200	.088	.1365

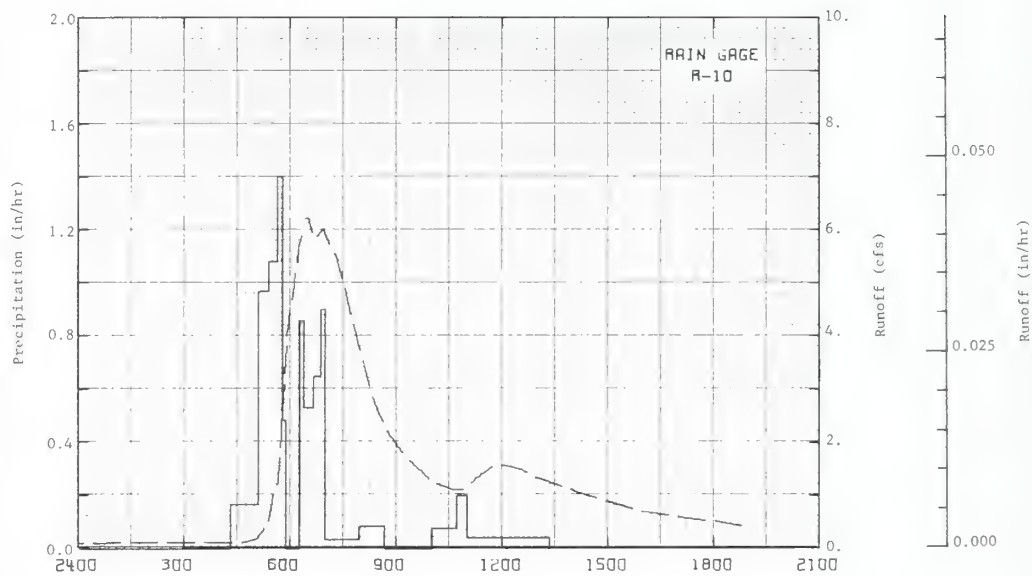
NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.006793. FOR 30-DAY ANTECEDENT TEMPERATURE, RAINFALL AND RUNOFF, SEE P. 67.1-2, 67.5-2 AND 67.2-2. 1/ RUNOFF PRIOR TO 0200 ON 10-19-66.



NORTH DANVILLE, VERMONT WATERSHED W-2

1967 SELECTED RUNOFF EVENT			NORTH DANVILLE, VERMONT				WATERSHED W-2			
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL INCHES	RUNOFF INCHES	DATE MO-DAY	TIME OF DAY	INTENSITY IN/HR	ACC. INCHES	DATE MO-DAY	TIME OF DAY	RATE CFS	ACC. IN/HR
			Event of July 16, 1967							
7-16	RG R-10 .00	1/.002	7-16	RG	R-10		7-16			
				0420	.0000	.00		0158	.114	.0000
				0505	.1494	.13		0439	.114	.0021
				0524	.0447	.42		0505	.107	.0024
				0539	1.0000	.60		0522	.446	.0032
				0548	1.4000	.90		0531	1.028	.0036
				0553	.4000	.04		0540	1.244	.0051
				0616	.0000	.94		0545	2.129	.0060
				0623	.0571	1.04		0555	4.006	.0095
				0640	.5294	1.19		0600	4.467	.0119
				0652	.6500	1.32		0605	4.789	.0145
				0700	.0000	1.44		0615	5.654	.0204
				0757	.0316	1.47		0625	4.215	.0211
				0840	.0937	1.53		0630	4.215	.0304
				1002	.0000	1.53		0640	5.839	.0374
				1042	.0750	1.58		0645	5.839	.0407
				1100	.2000	1.64		0655	6.024	.0474
				1321	.0393	1.73		0710	5.654	.0573
								0720	5.475	.0636
								0745	4.309	.0774
								0815	3.044	.0899
								0830	2.553	.0947
								0850	2.129	.1000
								0915	1.742	.1055
								1000	1.244	.1131
								1035	1.008	.1177
								1055	1.099	.1202
								1115	1.319	.1229
								1145	1.565	.1278
								1205	1.565	.1313
								1230	1.480	.1355
								1300	1.319	.1404
								1405	1.064	.1492
								1603	.673	.1608
								1904	.403	.1719
								2222	.325	.1800
								2400	.308	.1835

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.006793. FOR 30-DAY ANTECEDENT TEMPERATURE, RAINFALL AND RUNOFF, SEE P. 67.1-2, 67.5-2 AND 67.2-2. 1/ RUNOFF PRIOR TO 0158 ON 7-16-67.



July 16, 1967

NORTH DANVILLE, VERMONT WATERSHED W-2

MONTHLY PRECIPITATION AND RUNOFF (inches) ^{1/}						NORTH DANVILLE, VERMONT						WATERSHED W-3		67.03
						AREA—2.067 ACRES (3.23 SQ.MI.)								
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1965	P	2.26	3.26	1.38	2.60	.76	4.97	4.33	7.60	4.77	4.72	5.69	2.92	45.26
	Q	.98	.88	1.35	3.70	1.47	1.40	.71	1.12	1.54	2.29	2.66	1.56	19.66
1966	P	2.85	3.00	5.26	1.96	4.18	3.84	2.83	5.20	3.76	2.71	2.92	3.93	42.44
	Q	1.12	.85	2.68	6.83	4.98	1.54	.62	.63	.69	.69	.91	1.09	22.63
1967	P	2.25	2.89	1.06	3.72	5.50	3.16	4.77	3.42	3.46	5.71	3.97	4.52	44.43
	Q	.76	.59	.73	6.28	5.91	1.84	1.08	.77	.66	1.88	1.46	2.06	24.02
STA AV ^{2/}		2.89	3.36	3.26	3.59	3.66	3.89	3.92	4.57	3.11	4.45	4.37	3.38	44.45
(60-67) Q		.96	.83	1.40	6.66	3.61	1.45	.83	.75	.70	1.30	1.50	1.28	21.27
MEAN P ^{3/}		2.57	2.14	2.44	2.82	3.23	3.77	3.47	3.27	3.48	3.06	3.15	2.59	35.99
73 YR														

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS

YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1965	11-17	.04	11-17	.04	11-17	.08	11-17	.22	11-17	.33	11-17	.44	11-16	.56	4-15	1.67
1966	4-21	.04	4-21	.04	4-21	.08	4-21	.23	4-21	.41	4-21	.69	4-21	1.18	4-18	3.46
1967	5-3	.07	5-3	.06	5-3	.11	4-14	.32	5-3	.43	4-2	.58	4-2	.88	4-17	1.97

MAXIMUMS FOR PERIOD OF RECORD

19 60 to 19 67	4-21 1963	.07	4-21 1963	.07	4-21 1963	.13	4-14 1967	.32	4-14 1964	.59	4-15 1964	1.08	4-16 1964	1.86	4-20 1964	4.44
----------------	-----------	-----	-----------	-----	-----------	-----	-----------	-----	-----------	-----	-----------	------	-----------	------	-----------	------

Notes: Watershed conditions: Forest, predominantly hardwoods, 67% pasture of mostly bluegrass, 19%; cultivated land consisting of clover, orchard grass, and timothy hay with very small areas in row crops, 11%; and idle land in tall grasses and woody plants, 3%. ^{1/} Precipitation records from Rain Gage R-1. ^{2/} Precipitation records began Jan. 1, 1959, runoff records began Jan. 1, 1960. ^{3/} Mean P based on 73-yr (1895-1967) U.S. Weather Bureau record period at St. Johnsbury, Vt.

1965 MEAN DAILY DISCHARGE (cfs)						NORTH DANVILLE, VERMONT						WATERSHED W-3		67.03
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC		
1	3.38	2.00	2.38	2.36	8.78	2.52	1.69	1.21	17.23	9.91	6.27	5.05		
2	3.38	2.00	2.38	2.38	7.73	2.13	1.69	1.22	14.11	8.54	4.45	5.09		
3	3.31	1.96	3.19	2.38	6.93	1.94	1.60	1.22	3.99	6.07	4.42	4.98		
4	3.09	1.87	4.67	2.53	6.71	1.90	2.93	1.18	3.15	7.72	5.45	8.83		
5	3.04	1.92	6.01	2.79	5.92	1.80	1.94	1.15	2.71	4.67	4.17	7.54		
6	2.77	2.00	6.93	4.23	5.25	1.66	5.80	1.15	2.48	4.34	4.04	5.46		
7	2.80	2.01	8.87	3.78	4.83	13.86	2.51	1.98	2.33	4.13	4.04	4.50		
8	2.83	8.22	9.70	3.77	4.69	11.43	2.24	3.35	2.33	12.06	7.91	4.91		
9	3.55	5.54	6.91	5.34	4.81	3.12	2.23	2.82	2.25	8.38	15.31	4.12		
10	3.07	3.31	5.34	13.73	5.78	3.39	2.33	7.12	4.23	5.46	5.81	4.15		
11	2.93	2.97	3.92	10.21	5.36	2.85	1.87	2.63	2.71	4.65	5.21	3.94		
12	2.79	2.75	3.90	11.76	4.30	2.40	1.63	1.89	2.29	7.66	4.88	3.81		
13	2.74	2.62	3.63	10.84	3.88	23.79	1.53	15.88	2.49	5.90	6.18	3.69		
14	2.57	2.40	3.37	12.43	3.64	7.65	1.62	2.89	2.82	4.67	5.92	3.88		
15	2.52	2.52	3.15	15.57	3.48	4.51	1.55	2.06	3.07	8.93	4.77	3.94		
16	2.47	2.43	3.06	27.31	3.45	3.35	1.40	1.67	3.31	10.44	8.04	3.94		
17	2.44	2.24	3.02	14.03	3.56	3.09	1.39	1.50	2.59	5.95	37.07	3.88		
18	2.50	2.34	2.99	11.22	3.50	3.58	6.30	4.88	2.50	5.09	11.34	3.75		
19	2.50	2.30	2.95	11.79	3.42	2.90	2.81	3.34	3.04	4.77	8.52	3.40		
20	2.26	2.06	2.79	15.27	3.28	2.60	1.96	2.67	3.11	4.25	7.73	3.40		
21	2.25	2.11	2.70	18.26	3.00	2.33	1.80	1.99	2.63	3.88	7.42	6.14		
22	2.27	2.08	2.70	28.21	2.95	2.24	1.60	1.75	2.25	3.96	7.42	3.65		
23	2.02	2.13	2.71	14.44	2.86	2.25	1.55	1.79	2.11	12.65	7.27	3.38		
24	2.13	2.08	2.59	10.99	2.89	3.13	1.50	1.67	5.68	8.58	6.59	3.31		
25	2.13	2.56	2.58	10.24	2.56	2.33	1.49	1.58	20.94	6.09	6.17	4.07		
26	2.20	4.77	2.56	11.24	2.42	2.01	1.39	2.86	4.40	5.11	6.04	4.46		
27	2.31	2.74	2.52	13.11	2.38	1.84	1.10	7.26	3.42	4.88	8.84	5.38		
28	2.31	2.38	2.48	11.09	2.31	1.72	.94	7.44	3.15	4.67	7.63	3.42		
29	2.25	-----	2.38	10.36	2.24	1.59	.92	3.87	3.04	4.34	6.44	3.04		
30	4.80	-----	2.38	9.98	2.15	1.54	1.02	2.99	2.96	4.64	5.79	3.04		
31	3.06	-----	2.38	-----	2.31	-----	1.13	2.48	-----	6.11	-----	3.44		
MEAN	2.74	2.73	3.78	10.72	4.11	4.05	1.98	3.14	4.44	6.40	7.70	4.37		
INCHES	.977	.879	1.349	3.704	1.467	1.399	.708	1.123	1.535	2.29	2.662	1.561		

Notes: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .011515.

1966 MEAN DAILY DISCHARGE (cfs)						NORTH DANVILLE, VERMONT						WATERSHED W-3		67.03
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC		
1	7.17	2.38	7.41	6.79	22.31	4.55	2.06	1.22	1.40	1.65	1.62	2.91		
2	5.03	2.33	5.97	6.44	15.36	4.06	1.89	1.35	1.34	1.46	1.69	2.48		
3	3.81	2.27	3.40	6.17	14.57	3.85	1.79	1.86	1.37	1.24	8.21	2.34		
4	3.41	2.33	3.53	6.04	17.27	3.70	1.79	1.38	4.02	1.26	3.28	2.97		
5	3.56	2.38	12.66	6.04	13.53	4.20	1.77	1.27	2.34	1.55	2.27	1.89		
6	3.48	2.30	12.39	6.60	20.33	6.99	1.72	1.13	1.73	1.87	2.27	2.06		
7	3.42	2.23	5.94	7.70	16.99	4.02	2.10	1.07	1.57	1.55	2.31	2.05		
8	3.21	2.24	3.61	8.85	12.08	4.95	1.83	1.44	1.41	1.38	2.46	3.76		
9	3.15	2.27	2.86	8.43	16.19	4.13	1.68	1.21	1.32	1.33	2.35	5.64		
10	3.25	2.28	2.75	8.87	15.30	19.65	1.82	1.20	1.25	1.61	2.20	6.77		
11	3.07	5.26	2.52	9.87	12.89	8.05	2.41	1.48	1.07	1.79	4.60	12.51		
12	2.94	4.33	2.38	10.49	12.29	4.66	2.30	1.64	1.09	1.83	2.74	3.97		
13	2.94	3.40	2.38	10.28	24.43	3.78	2.03	1.37	1.18	1.63	2.26	3.03		
14	2.90	3.95	2.48	19.71	13.79	3.65	1.58	1.22	1.33	1.53	2.00	3.11		
15	2.86	2.09	2.48	25.00	11.78	4.40	1.42	1.28	1.46	1.46	2.17	2.49		
16	2.86	3.00	2.38	25.00	10.59	7.70	1.37	2.04	1.38	3.03	2.02	2.55		
17	2.81	2.72	2.96	31.36	10.46	5.51	1.31	6.01	1.18	1.55	2.21	2.61		
18	2.75	2.73	4.28	32.54	10.07	3.54	1.38	1.69	1.21	1.46	3.16	2.76		
19	2.75	2.56	5.03	34.98	48.74	3.18	1.74	2.86	1.28	1.56	2.70	1.99		
20	2.75	2.48	5.41	25.69	24.28	3.01	2.17	1.21	1.19	8.40	2.02	2.11		
21	2.81	2.38	6.25	43.26	15.08	2.91	1.48	1.20	1.10	3.24	1.86	2.00		
22	2.86	2.33	6.77	53.62	11.59	2.54	1.54	1.63	6.67	2.40	1.86	1.96		
23	2.86	2.33	9.74	38.56	9.88	2.41	1.48	3.18	5.90	1.95	1.88	1.86		
24	2.76	2.27	13.57	35.07	8.89	2.29	1.32	3.04	2.54	1.81	2.03	2.92		
25	2.65	2.27	45.93	34.98	8.13	2.90	1.28	1.79	2.28	1.73	2.41	2.89		
26	2.61	2.27	15.12	25.29	7.34	2.87	2.14	1.65	1.83	1.63	3.06	2.16		
27	2.56	2.27	10.39	18.26	6.46	2.46	1.58	1.46	1.68	1.58	2.66	2.08		
28	2.48	2.27	9.36	15.64	5.92	2.08	1.60	1.43	3.00	1.54	2.55	2.11		
29	2.38	-----	8.13	14.65	5.68	3.07	2.24	1.31	2.92	1.60	2.65	2.23		
30	2.42	-----	7.74	16.51	5.12	2.86	1.50	1.91	1.88	1.59	3.16	2.17		
31	2.42	-----	7.27	-----	4.78	-----	1.26	2.03	-----	1.47	-----	2.11		
MEAN	3.13	2.64	7.52	19.76	13.94	4.47	1.73	1.76	2.00	1.93	2.62	3.05		
INCHES	1.116	.851	2.684	6.825	4.976	1.543	.617	.628	.690	.687	.906	1.088		

Notes: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .011515.

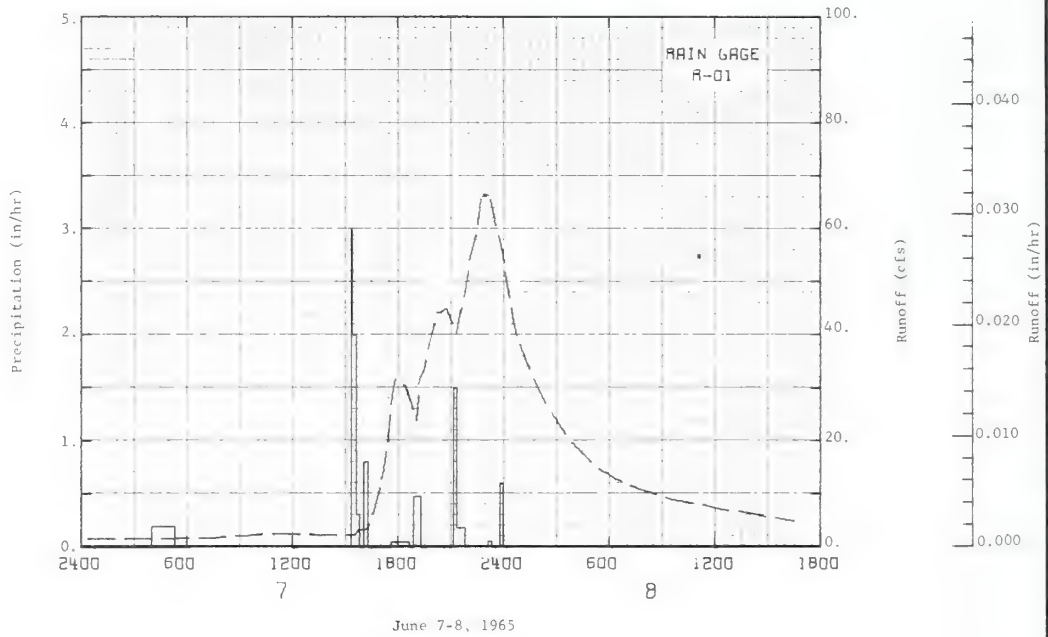
1967 MEAN DAILY DISCHARGE (cfs)						NORTH DANVILLE, VERMONT						WATERSHED W-3		67.03
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC		
1	2.11	2.02	1.74	10.17	12.59	7.82	2.45	2.37	2.36	2.14	3.43	2.71		
2	2.17	1.94	1.66	31.95	12.43	7.03	2.23	1.86	1.98	2.68	3.37	2.69		
3	2.19	1.94	1.63	44.56	49.45	6.30	3.32	1.86	1.90	1.97	7.61	3.83		
4	2.19	1.94	1.65	14.40	18.94	5.82	2.64	5.18	1.79	1.76	6.14	3.67		
5	2.19	1.94	1.70	12.08	18.85	5.16	2.32	2.99	1.96	2.26	5.60	3.25		
6	2.09	1.92	1.70	10.91	13.25	4.49	2.26	2.13	1.70	2.99	3.99	3.08		
7	2.76	1.85	1.66	8.32	10.84	4.08	2.04	1.94	1.51	2.12	3.76	3.02		
8	2.15	1.81	1.63	7.35	14.96	5.54	1.94	1.75	1.47	1.94	3.55	3.04		
9	2.17	1.85	1.68	10.62	16.30	6.64	2.07	1.76	1.49	1.95	3.38	3.04		
10	2.11	1.85	1.85	36.01	16.41	4.42	3.93	2.20	4.38	11.68	3.47	3.03		
11	2.11	1.83	2.29	14.91	13.79	8.44	2.20	1.83	2.09	16.80	3.30	3.04		
12	2.11	1.83	2.26	10.43	17.19	12.22	8.90	1.71	1.76	3.60	3.96	35.32		
13	2.04	1.85	2.03	11.36	10.70	5.37	3.12	1.53	1.61	2.88	5.32	18.80		
14	2.02	1.81	1.96	17.21	8.98	5.03	2.29	1.65	1.56	2.60	3.84	8.75		
15	2.06	1.77	1.86	25.71	11.13	10.52	2.06	1.67	1.50	2.66	3.48	6.23		
16	2.06	2.08	1.85	20.86	11.76	6.73	7.89	1.61	1.42	2.49	3.70	6.31		
17	2.02	1.85	1.93	16.59	9.39	5.24	3.57	1.50	1.39	2.51	6.25	6.93		
18	1.89	1.85	1.88	21.46	18.01	6.41	2.57	1.46	1.39	17.45	3.53	6.07		
19	1.88	1.85	1.72	15.40	30.79	3.58	2.29	1.57	1.32	17.28	3.53	5.97		
20	1.94	1.82	1.71	18.70	25.10	3.44	2.25	1.94	1.22	4.85	3.43	5.90		
21	1.94	1.78	1.67	16.98	14.14	3.46	2.44	1.75	1.34	3.88	3.24	4.61		
22	1.94	1.77	1.64	26.86	11.52	6.28	3.12	1.58	2.53	3.98	3.57	5.26		
23	2.08	1.77	1.63	30.62	13.52	4.59	2.31	1.56	1.78	3.49	7.04	4.61		
24	2.55	1.75	1.63	21.64	9.76	3.53	3.49	1.34	1.76	3.30	6.46	3.60		
25	2.43	1.67	1.67	16.88	24.57	3.54	4.67	1.30	3.37	3.25	4.21	4.45		
26	2.25	1.67	1.81	16.27	36.62	3.49	3.42	1.28	2.02	20.42	4.01	3.55		
27	2.18	1.73	2.28	15.32	19.51	2.85	2.34	2.12	1.74	5.73	3.90	3.70		
28	2.23	1.77	3.10	14.49	13.80	2.56	2.91	7.79	1.54	4.15	3.74	3.46		
29	2.08	-----	3.31	13.82	10.85	2.40	2.73	2.03	1.94	3.76	3.49	3.60		
30	2.19	-----	3.73	13.12	9.58	2.38	2.13	1.69	3.66	3.58	2.75	3.48		
31	2.05	-----	4.82	-----	8.85	-----	2.18	4.30	-----	3.50	-----	3.64		
MEAN	2.13	1.84	2.05	18.17	16.57	5.31	3.03	2.17	1.92	5.28	4.24	5.76		
INCHES	.762	.593	.733	6.276	5.914	1.835	1.083	.774	.662	1.884	1.463	2.057		

Notes: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .011515.

1965 SELECTED RUNOFF EVENT			NORTH DANVILLE, VERMONT				WATERSHED #3				67.03
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in./hr.)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)	
Event of June 7, 1965											
6- 7	RG R-1 .00 1/ .003		6- 7	RG	R-1		6- 7				
				0400	.0000	.00		0414	1.426	.0000	
				0520	.1950	.26		0419	1.772	.0017	
				1520	.0000	.26		0709	1.855	.0024	
				1525	3.0000	.51		0913	2.272	.0044	
				1540	2.0000	1.01		1026	2.564	.0059	
Watershed conditions: 67% forest land; 19% pastured land; 11% hay and 3% idle land with dense grass and brush growth.											
				1550	.3000	1.06		1326	2.272	.0093	
				1505	.0000	1.06		1527	2.188	.0115	
				1620	.8000	1.26		1535	2.647	.0116	
				1740	.0000	1.26		1553	3.356	.0120	
				1840	.0500	1.31		1606	3.355	.0123	
				1855	.0000	1.31		1621	3.814	.0127	
				1920	.4800	1.51		1636	6.440	.0133	
				2110	.0000	1.51		1658	10.963	.0148	
				2120	1.5000	1.76		1714	14.798	.0164	
				2150	.1800	1.85		1729	20.413	.0185	
				2310	.0000	1.85		1745	30.055	.0217	
				2320	.0600	1.86		1752	31.597	.0234	
				2350	.0000	1.86		1828	30.055	.0323	
				2400	.6000	1.86		1806	23.698	.0405	
								1914	31.597	.0423	
								1934	34.015	.0475	
								1951	39.246	.0525	
								2018	44.019	.0615	
								2044	45.019	.0708	
								2123	40.184	.0841	
								2130	43.039	.0844	
								2151	48.083	.0940	
								2207	54.690	.1006	
								2233	50.630	.1126	
								2245	65.674	.1187	
								2315	65.674	.1345	
								2400	54.690	.1562	
							6- 8	0038	41.122	.1708	
								0131	33.202	.1845	
								0231	26.407	.2008	
								0346	20.029	.2147	
								0445	16.757	.2234	
								0533	14.339	.2294	
								0641	12.151	.2366	
								0755	10.598	.2433	
								0937	8.816	.2512	
								1203	7.274	.2606	
								1428	5.919	.2693	
								1631	4.752	.2735	
								1931	3.930	.2798	
								2400	3.481	.2878	

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.0004798. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USDA MISC. PUB. 994, P. 67.3-5. FOR 30-DAY ANTECEDENT TEMPERATURE, RAINFALL AND RUNOFF, SEE P. 67.1-1, 67.1-3, AND 67.3-1 RESPECTIVELY. 1/RUNOFF PRIOR TO 0416 ON 6-7-65.

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.0004798. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USDA MISC. PUB. 994, P. 67.3-5. FOR 30-DAY ANTECEDENT TEMPERATURE, RAINFALL AND RUNOFF, SEE P. 67.1-1, 67.1-3, AND 67.3-1 RESPECTIVELY. 1/RUNOFF PRIOR TO 0416 ON 6-7-65.



NORTH DANVILLE, VERMONT WATERSHED W-3

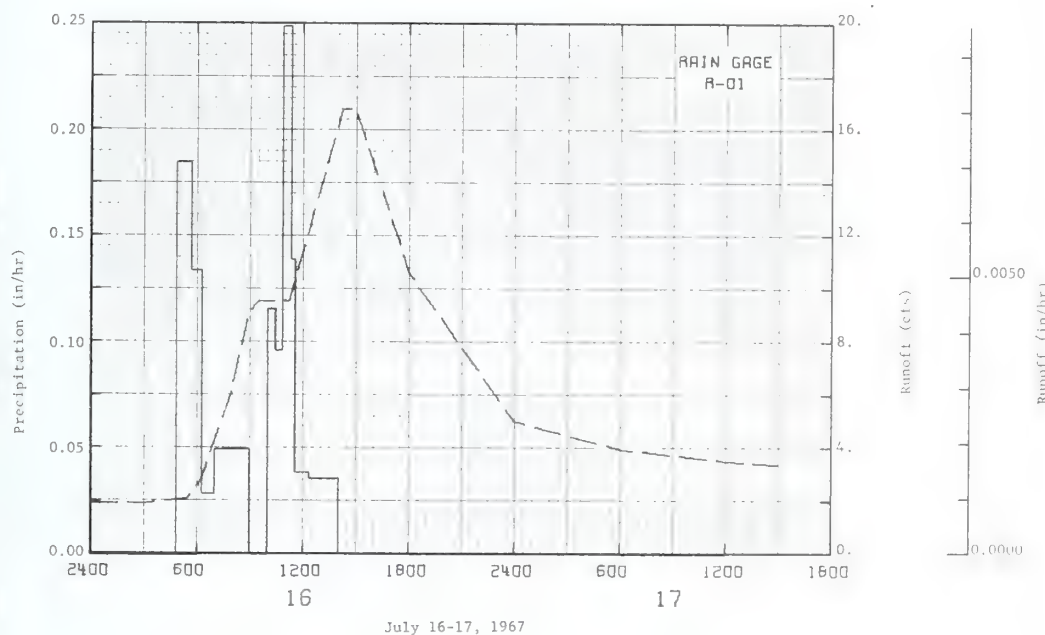
1966 SELECTED RUNOFF EVENT			NORTH DANVILLE, VERMONT				WATERSHED W-3			67.03
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)
Event of October 19-22, 1966										
10-19	RG R-1 .00	1/.006	10-19	RG	R-1		10-19	0900	1.459	.0000
				0910	.0000	.00		1531	1.424	.0048
				1500	.0088	.05		2015	1.624	.0085
				2100	.0117	.12		2145	1.600	.0097
				2400	.0357	.23		2244	1.855	.0105
			10-20	0037	.0324	.25		2400	1.938	.0116
				0200	.2024	.53	10-20	0932	2.022	.0121
				0321	.0000	.53		0119	2.459	.0129
				0501	.1200	.73		0154	2.855	.0136
				0601	.0900	.82		0205	3.147	.0139
				1100	.0482	1.06		0245	3.039	.0150
				1300	.0450	1.15		0316	5.190	.0161
				1500	.0400	1.23		0405	6.149	.0183
				1759	.0134	1.27		0441	7.566	.0203
			10-21	0100	.0000	1.27		0514	9.504	.0226
				0601	.0100	1.32		0545	10.213	.0251
								0557	10.963	.0260
								0631	12.151	.0291
								0656	13.006	.0316
								0756	13.006	.0378
								0743	11.359	.0492
								0958	11.359	.0496
								1114	11.359	.0545
								1200	11.359	.0607
								1301	10.963	.0661
								1459	10.213	.0761
								1646	9.150	.0844
								1800	8.504	.0896
								1910	7.566	.0941
								2107	6.169	.1005
								2319	4.081	.1064
								2400	4.752	.1080
							10-21	0156	4.335	.1122
								0258	3.039	.1143
								0428	3.689	.1170
								0544	3.355	.1191
								0858	3.147	.1241
								1119	2.939	.1275
								1150	2.939	.1295
								1446	2.751	.1323
								1713	2.751	.1355
								1738	2.855	.1361
								1750	3.043	.1366
								1844	3.043	.1377
								2119	3.043	.1414
								2400	2.855	.1452
							10-22	0302	2.751	.1493
								0601	2.564	.1531
								0843	2.459	.1564
								1012	2.376	.1591

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.0004798. FOR 30-DAY ANTECEDENT TEMPERATURE, RAINFALL AND RUNOFF, SEE P. 67.1-2, 67.1-3 AND 67.3-2 RESPECTIVELY. 1/ RUNOFF PRIOR TO 0900 ON 10-19-66.



1967 SELECTED RUNOFF EVENT			NORTH DANVILLE, VERMONT				WATERSHED W-3				67.03
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)	
Event of July 16-17, 1967											
7-16	.00	.003	7-16	RG	R-1		7-16	0301	1.938	.0000	
				0450	.0000	.00		0529	2.105	.0024	
				0542	.1845	.16		0615	2.751	.0033	
				0618	.1333	.24		0759	6.169	.0070	
				0700	.0288	.26		0859	9.150	.0107	
				0901	.0494	.36					
				1001	.0000	.36		0929	9.504	.0129	
				1027	.1154	.41		1114	9.504	.0209	
				1052	.0960	.45		1414	16.757	.0398	
				1121	.2493	.57		1459	16.757	.0458	
				1134	.1395	.60		1900	10.588	.0656	
				1221	.0383	.63	7-17	2400	4.991	.0880	
				1402	.0356	.69		0400	3.939	.1008	
								1200	3.481	.1115	
								1459	3.356	.1164	
								1914	2.955	.1227	
								2129	2.751	.1257	
								2400	2.751	.1290	

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.0004798. FOR 30-DAY ANTECEDENT TEMPERATURE, RAINFALL AND RUNOFF, SEE P. 67.1-2, 67.1-4 AND 67.3-2 RESPECTIVELY. 1/ RUNOFF PRIOR TO 0301 ON 7-16-67.



NORTH DANVILLE, VERMONT WATERSHED W-3

NORTH DANVILLE, VERMONT WATERSHED W-4

LOCATION: Caledonia Co., Vt.; 4.7 mi. NW of St. Johnsbury; Morrill Brook, Sleepers River, Connecticut River Basin.

AREA: 10,752 ac. (16.8 sq. mi.)

<u>SLOPES:</u>	Percent Slope	0-3	3-8	8-15	15-25	25-35
	Percent of area	3	21	30	27	19

SOILS: Medium acid to neutral glacial till derived from schist interbedded with limestone.

Type	Percent of area	Topsoil			Subsoil		Substratum		Internal drainage
		Avg. depth (in)	Structure	Permeability	Structure	Permeability	Avg. depth to (in)	Permeability	
Woodstock fine sandy loam	23	6	Weak granular	Rapid	Weak granular	Rapid	24	(Bedrock) zero	Rapid
Cabot silt loam	21	9	Moderate medium blocky	Moderate	Moderate	Moderate	18	Slow	Medium
Buckland loam	17	8	Moderate medium granular	Moderately rapid	Weak medium subangular blocky	Moderate	27	Slow	Medium
Colrain fine sandy loam	12	6	Weak granular	Rapid	Weak granular	Rapid	33	Rapid	Rapid
Glover rocky loam	12	7	Weak fine granular	Rapid	Weak fine subangular blocky	Moderate	24	(Bedrock) zero	Medium
Calais loam	5	8	Moderate medium granular	Rapid	Weak medium subangular blocky	Moderate	27	Moderate	Medium
Peacham loam	3	10	Moderate fine subangular blocky	Moderate	Structureless	Slow	12	Slow	Very slow
Worthington loam	1	9	Weak fine granular	Rapid	Weak fine granular	Moderately rapid	27	Rapid	Rapid
Other	3								

EROSION: Class 1 - 100%.

<u>LAND CAPABILITY:</u>	Class	I	II	III	IV	V	VII
	Percent of area	0	15	35	12	11	13

GEOLOGY: Very slightly anticlinal with no faults. Predominantly Waits River Formation made up of calcareous granulate, calcareous schists, and cal-silicate rocks interbedded with quartz-mica schists and micaceous quartzite. This formation is dense and impervious with no solution chambers and has an approximate depth of 10,000 feet. For detailed strike and dip characteristics see Miscellaneous Publication No. 994, page 67.5-6. Overlying this geologic formation is a dense impervious glacial till (boulder clay) that is from 0-90 feet deep. Source of data: The Geology of the Lyndonville Area, Vermont; The Geology of the St. Johnsbury Quadrangle, Vermont and New Hampshire; Bulletin Nos. 8 and 13, Vermont Geological Survey, Vermont Development Commission, Montpelier, Vermont.

SURFACE DRAINAGE: For the nature of the principle waterway and its tributaries, see page 67.4-1 of this publication. For elevation characteristics, see Miscellaneous Publication No. 994, page 67.5-5.

CHARACTER OF FLOW: Perennial, continuous.

INSTRUMENTATION: Stream discharge is recorded over a 5:1 broad crested V-notch Weir with a capacity of 7,000 cfs. The recording device consists of a continuous water stage recorder with chart speed of 9.6 in/day and gage scale of 1:6; field rating was established by current meter measurements.

WATERSHED CONDITIONS: Forest 74%, cultivated 12%, pasture 12%, and idle 2%.

GENERALLY REPRESENTS: Sloping to steep cultivated and forested land at higher elevations in the New England and Eastern New York Upland resource area with rapid to slowly permeable soils, rapid to moderate internal drainage, excellent surface drainage, and little or no erosion problems.

MONTHLY PRECIPITATION AND RUNOFF (inches) ^{1/}						NORTH DANVILLE, VERMONT AREA—10,752 ACRES (16.8 SQ. MI.)							67.04	
MONTH YEAR		JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1960	P	2.18	2.41	1.47	3.42	2.97	3.34	2.99	1.69	3.88	4.01	2.60	1.59	32.55
	Q	1.61	1.45	1.24	7.66	4.22	1.05	.43	.23	.42	1.00	1.18	.96	21.45
1961	P	.85	2.54	1.72	3.78	2.91	5.14	3.68	3.21	1.57	1.64	2.53	2.44	32.01
	Q	.61	.97	1.67	5.11	3.89	2.96	1.73	.73	.45	.36	.72	.74	19.94
1962	P	2.03	2.32	1.71	3.18	2.91	2.91	4.62	2.70	3.71	6.71	2.36	2.00	37.16
	Q	.71	.40	1.09	6.01	2.74	.78	.58	.75	.70	2.90	2.42	1.21	20.29
1963	P	2.14	2.30	2.21	3.82	2.72	1.57	3.69	4.84	1.48	.34	5.25	1.81	32.17
	Q	.76	.54	1.11	6.92	3.73	.73	.35	.54	.22	.19	1.20	1.02	17.31
1964	P	2.48	.99	3.89	3.12	3.36	1.78	3.44	5.10	1.06	1.85	3.08	3.15	33.33
	Q	.74	.54	2.00	5.37	2.68	.74	.41	.72	.27	.42	.94	1.24	16.07
1965	P	1.46	2.32	.69	2.06	.80	4.97	3.65	6.07	4.05	4.01	4.51	1.86	36.45
	Q	.86	.80	1.41	2.93	1.45	.93	.53	.74	1.15	1.98	2.30	1.51	16.59
1966	P	1.41	2.09	3.99	1.09	3.64	3.43	2.44	3.66	2.90	2.09	2.56	2.81	32.11
	Q	.91	.72	2.46	3.85	3.39	1.45	.36	.37	.41	.53	.84	.96	16.25
1967	P	1.25	1.82	.60	3.93	5.45	2.77	4.86	3.04	2.47	4.88	2.29	3.51	36.87
	Q	.63	.45	.71	4.80	4.50	1.69	1.07	.56	.48	1.76	1.34	1.63	19.62
STA AV ^{2/}	P	1.99	2.21	2.25	2.85	2.89	3.12	3.32	3.94	2.60	3.75	3.40	2.53	34.85
	Q	.85	.73	1.46	5.33	3.32	1.29	.68	.58	.51	1.14	1.37	1.16	18.44
MEAN P ^{3/} 73 YR		2.57	2.14	2.44	2.82	3.23	3.77	3.47	3.27	3.48	3.06	3.15	2.59	35.99

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1960	4-18	.04	4-18	.04	4-18	.07	4-18	.20	4-18	.32	4-18	.52	4-17	.94	4-12	2.75
1961	6-13	.04	6-13	.04	6-13	.07	6-13	.17	6-13	.26	4-26	.39	4-26	.64	4-21	2.15
1962	10-7	.04	10-7	.04	10-7	.07	10-6	.21	10-6	.38	10-6	.66	4-7	.91	4-6	2.34
1963	4-22	.04	4-22	.04	4-21	.07	4-21	.19	4-21	.32	4-21	.50	4-20	.89	4-16	2.60
1964	4-14	.03	4-14	.03	4-14	.05	4-14	.10	4-14	.16	4-14	.30	4-14	.56	4-12	2.57
1965	11-17	.02	11-17	.02	11-17	.04	11-17	.08	11-17	.12	11-17	.21	11-17	.30	4-15	1.20
1966	3-25	.02	3-25	.02	3-25	.04	3-25	.12	3-25	.26	3-25	.50	3-24	.67	4-19	1.66
1967	5-3	.02	5-3	.02	5-3	.04	5-3	.09	5-3	.12	5-3	.21	4-2	.35	4-15	1.50
MAXIMUMS FOR PERIOD OF RECORD																
1960 TO 1967	4-18	.04	4-18	.04	4-18	.07	10-6	.21	10-6	.38	10-6	.66	4-17	.94	4-12	2.75
	1960		1960		1960		1962		1962		1962		1960		1960	

Notes: Watershed Conditions: See page 67.4-1. ^{1/} Precipitation data obtained from the R-10 gage. ^{2/} Precipitation records began Sept. 1958, Runoff records began Jan. 1960, part year records not used in Sta Av. ^{3/} Mean P based on 73-yr (1895-1967) U.S. Weather Bureau record period at St. Johnsbury, Vt.

1962 DAILY AIR TEMPERATURE (degrees F)													NORTH DANVILLE, VERMONT													WATERSHED W-4													67.04												
DAY	JAN		FEB		MAR		APR		MAY		JUNE		JULY		AUG		SEPT		OCT		NOV		DEC																												
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN																											
1	22	-3	-4	-27	30	1	33	29	56	35	80	53	69	49	78	50	82	59	56	45	39	30	50	22																											
2	20	-6	10	-28	7	-6	30	17	42	37	62	46	68	38	74	46	72	44	67	31	45	22	49	20																											
3	29	3	25	10	9	-7	27	13	44	36	67	43	69	32	81	42	74	38	73	32	36	25	38	22																											
4	29	-12	29	19	23	4	37	8	45	37	78	34	72	34	80	54	73	38	68	44	39	30	50	22																											
5	21	-9	43	24	31	20	46	19	53	30	63	48	61	40	83	60	57	47	59	47	32	26	47	27																											
6	31	21	32	-7	32	24	53	21	53	28	71	50	68	33	84	63	56	33	48	46	26	21	45	35																											
7	34	30	11	-13	35	17	45	34	51	30	71	38	77	42	76	66	68	28	50	45	41	15	35	26																											
8	36	26	20	-9	41	8	50	36	46	23	70	36	82	42	75	55	74	36	53	46	53	32	33	28																											
9	25	12	24	8	45	3	57	29	52	29	77	32	82	60	63	55	73	36	50	44	52	30	38	22																											
10	14	5	11	-11	50	11	36	28	56	33	79	49	74	55	60	51	76	59	47	42	54	32	30	18																											
11	15	-9	13	-22	46	12	42	24	57	23	79	56	78	45	64	52	69	56	50	32	48	26	20	-1																											
12	22	-6	20	-16	32	22	49	23	63	21	70	50	84	50	78	44	60	54	71	39	30	15	16	-10																											
13	19	-5	25	-9	32	25	32	25	67	25	70	42	71	56	72	51	75	44	42	33	29	15	14	-14																											
14	28	-2	25	0	35	17	31	25	50	38	81	40	74	52	66	60	77	54	46	22	26	22	13	-4																											
15	44	21	28	2	35	28	35	24	68	45	89	52	75	55	78	49	65	44	56	19	29	21	5	-14																											
16	38	7	27	0	39	28	39	23	66	50	86	49	75	55	80	44	56	36	66	32	39	16	24	-4																											
17	21	-7	27	9	37	27	41	27	85	48	87	50	77	51	75	55	60	36	66	43	32	21	18	-4																											
18	12	-17	17	-5	32	17	47	19	89	56	67	47	74	56	67	43	62	46	55	29	30	18	28	-6																											
19	17	5	15	-10	31	10	54	21	92	56	77	49	75	53	68	41	58	39	66	28	32	15	37	17																											
20	20	7	22	14	40	5	56	27	79	52	65	52	81	45	87	54	47	28	73	36	33	15	26	-20																											
21	23	-5	24	2	41	24	62	24	67	49	77	44	79	57	79	59	48	25	54	40	36	26	13	-24																											
22	33	17	26	10	50	21	57	32	66	36	78	49	75	50	72	45	50	24	52	33	39	29	26	0																											
23	25	1	29	18	36	24	58	31	73	33	73	59	72	44	75	39	60	34	54	36	30	20	27	17																											
24	18	-7	18	-1	41	27	35	23	65	48	75	61	72	47	78	45	61	28	38	28	33	20	24	-4																											
25	25	15	24	-8	37	34	50	23	69	41	76	59	78	41	80	46	65	28	38	26	38	19	19	-10																											
26	25	-5	27	12	39	35	64	30	66	38	76	50	72	51	84	50	62	48	33	25	36	15	30	4																											
27	29	-3	33	27	43	33	81	35	61	36	74	44	62	50	80	54	56	48	39	24	46	15	18	-20																											
28	0	-15	32	30	51	26	84	46	73	28	82	38	79	50	79	58	54	48	50	32	54	15	27	0																											
29	-3	-23	---	---	53	26	63	41	74	33	87	41	72	55	72	64	65	47	38	23	49	15	30	-2																											
30	15	-11	---	---	61	34	41	36	86	40	86	53	82	60	82	58	56	47	35	20	56	16	20	-12																											
31	-9	-22	---	---	36	29	---	---	76	58	---	---	72	58	84	50	---	---	42	31	---	---	---	0	-20																										
AV.	22	0	23	1	37	19	48	26	64	38	76	47	74	48	76	52	64	41	53	34	39	21	27	4																											
MEAN	11.0		11.6		27.9		37.1		51.0		61.5		63.4		63.8		52.4		43.4		30.0		15.6																												
STA AV	23	3	28	7	33	15	47	28	64	41	74	48	74	51	75	51	68	45	55	35	40	26	26	8																											

Notes: TEMPERATURE DATA IS FROM R-12. READINGS TAKEN DAILY FROM HYGROTHERMOGRAPH CHARTS. FOR OTHER TEMPERATURE VALUES FOR 1965, 1966, AND 1967, SEE PAGES 67.1-1.2. STA AV (STATION AVERAGE) BASED ON 1960-62 RECORDS.

1963 DAILY AIR TEMPERATURE (degrees F)													NORTH DANVILLE, VERMONT													WATERSHED W-4													67.04	
DAY	JAN		FEB		MAR		APR		MAY		JUNE		JULY		AUG		SEPT		OCT		NOV		DEC																	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN																
1	6	-4	20	-20	27	-8	58	14	48	29	86	40	92	64	73	39	67	44	63	25	48	35	26	6																
2	29	6	24	-2	33	20	51	31	48	30	84	44	96	63	66	58	74	41	74	35	44	35	26	6																
3	32	20	30	-16	34	14	32	30	66	24	82	42	70	50	79	52	75	50	64	46	34	24	26	15																
4	34	24	7	-24	38	18	42	12	77	38	88	54	64	46	74	52	68	38	50	38	46	14	25	18																
5	28	16	24	7	36	11	26	10	58	28	86	58	68	46	72	55	65	34	68	28	44	30	28	2																
6	31	16	32	18	34	11	40	18	59	22	82	60	67	44	80	54	66	39	78	34	44	37	20	0																
7	33	24	25	-12	31	20	43	28	58	27	77	50	68	42	81	56	73	48	84	50	59	43	26	16																
8	36	29	2	-24	40	4	38	24	66	37	78	50	68	47	78	54	75	42	63	38	57	49	30	12																
9	39	32	22	-7	39	8	38	20	74	48	72	45	64	43	76	46	74	48	48	26	50	42	40	28																
10	46	32	31	-3	38	8	32	26	48	26	62	38	65	46	62	44	60	41	62	26	43	39	30	14																
11	37	24	30	10	28	11	40	29	42	24	58	32	74	44	63	40	74	34	64	32	40	37	16	-2																
12	30	20	30	20	33	19	48	33	52	20	52	48	82	46	66	44	67	40	51	40	40	32	14	-2																
13	35	6	24	14	40	30	42	27	64	24	72	46	88	52	56	38	52	32	54	31	40	30	23	10																
14	20	-4	24	8	34	22	42	24	66	40	78	39	78	58	58	50	64	28	68	28	38	32	26	8																
15	21	-4	13	-4	30	10	48	28	62	32	66	47	73	56	68	48	68	31	75	40	38	28	12	6																
16	8	-21	0	-14	42	-5	56	26	76	27	70	40	76	58	62	42	74	34	74	43	40	26	8	2																
17	26	-7	18	-23	37	29	54	24	77	33	74	38	82	51	68	38	77	39	67	48	44	24	10	-6																
18	30	4	40	18	38	24	58	26	57	44	74	42	86	56	62	45	80	44	75	46	50	40	12	-8																
19	33	21	40	34	45	19	46	22	70	48	78	38	82	59	70	38	74	44	76	42	44	34	10	-3																
20	37	23	36	23	31	20	65	40	56	36	76	48	86	52	70	49	54	42	76	42	46	29	4	-11																
21	33	6	30	2	38	17	61	34	68	34	64	44	80	54	78	50	60	32	58	46	42	38	4	-10																
22	10	-8	7	-12	30	21	40	26	64	43	58	43	80	52	78	54	53	40	54	26	54	42	20	-2																
23	24	-1	16	-4	31	10	41	24	44	32	75	42	86	54	72	56	48	30	64	34	58	35	12	-8																
24	0	-10	26	4	48	1	38	26	63	24	88	46	90	54	61	48	58	24	76	40	34	20	20	10																
25	12	-14	24	8	58	27	44	29	72	25	87	46	94	62	60	46	68	26	78	44	26	15	24	11																
26	14	-14	12	-15	64	34	42	26	75	30	90	56	92	61	67	37	76	34	75	46	40	16	10	-9																
27	25	6	26	-22	48	30	47	28	80	34	88	50	90	60	66	44	65	46	68	44	50	24	6	-17																
28	8	-6	26	1	38	20	54	25	70	37	88	58	94	65	68	37	56	34	58	46	34	16	12	-8																
29	13	-11	---	---	42	10	68	20	64	52	83	54	90	64	58	53	46	34	48	32	44	13	19	-6																
30	24	7	---	---	58	32	48	38	69	50	92	66	68	50	67	52	50	30	40	32	52	32	12	-17																
31	18	-14	---	---	44	18	---	---	78	42	---	---	73	40	68	51	---	---	48	34	---	---	4	-20																
AV.	25	6	23	-1	38	16	46	26	64	34	77	47	80	53	69	47	65	37	64	37	44	30	18	1																
MEAN	15.5	5	11.0	0	27.0	36.0	49.0	62.0	66.5	58.0	51.0	50.5	37.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0																
STA AV	24	4	27	5	34	15	47	28	64	39	75	47	76	52	74	50	67	43	57	36	41	27	24	6																
NOTES: TEMPERATURE DATA IS FROM R-12. READINGS TAKEN DAILY FROM HYGROTHERMOGRAPH CHARTS. FOR OTHER TEMPERATURE VALUES FOR 1965, 1966, AND 1967, SEE PAGES 67.1-1.2. STA AV (STATION AVERAGE) BASED ON 1960-63 RECORDS.																																								

1964 DAILY AIR TEMPERATURE (degrees F)												NORTH DANVILLE, VERMONT WATERSHED W-4 67.04												
DAY	JAN		FEB		MAR		APR		MAY		JUNE		JULY		AUG		SEPT		OCT		NOV		DEC	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	19	-14	31	26	40	12	26	2	70	34	62	38	82	58	78	40	62	40	54	26	50	20	17	9
2	26	14	30	6	44	30	38	4	68	32	64	40	76	50	68	56	64	36	56	36	46	24	22	8
3	32	28	11	0	51	24	36	22	72	30	65	34	74	56	72	47	63	38	61	41	48	20	28	14
4	37	16	27	11	48	24	24	12	74	34	55	44	76	56	74	42	58	48	67	36	48	22	26	20
5	19	-4	32	22	54	35	42	3	72	40	57	34	66	54	64	52	64	50	44	26	36	24	25	22
6	24	-4	32	10	33	14	40	12	76	40	72	30	70	54	63	42	64	46	50	20	40	36	24	8
7	28	12	32	28	48	12	49	32	82	46	72	48	70	50	76	36	68	40	40	24	41	24	18	-5
8	30	5	31	16	36	28	46	36	78	56	74	51	76	50	74	52	75	41	49	16	49	22	17	-6
9	30	2	13	-6	35	25	34	32	75	56	74	48	77	50	53	38	70	50	54	32	49	24	25	2
10	31	12	16	-10	24	18	50	30	58	48	78	46	78	50	66	36	62	52	46	30	38	28	21	4
11	12	-4	20	-14	28	14	47	28	60	46	67	44	81	52	74	46	65	50	38	24	34	24	34	5
12	6	-12	34	-6	30	15	58	24	72	44	74	46	80	56	71	58	53	32	48	20	43	35	44	34
13	4	-12	30	7	32	10	64	32	72	44	72	46	72	58	59	38	60	26	44	40	58	38	40	34
14	8	-3	28	12	40	10	54	48	56	42	64	53	76	60	60	38	62	28	48	34	40	28	40	16
15	20	-12	30	0	42	26	54	38	68	32	62	44	78	58	57	42	51	30	72	28	32	21	26	4
16	22	-2	22	4	26	12	48	32	74	44	56	39	80	56	70	42	52	27	73	38	36	24	16	-6
17	26	4	18	0	32	6	40	30	68	48	61	46	86	56	72	50	56	32	70	34	32	26	35	18
18	30	6	36	-6	24	10	58	34	64	44	70	40	90	60	66	46	56	39	63	42	36	18	28	4
19	36	26	29	4	26	14	47	30	66	42	80	44	82	60	62	42	58	28	46	38	32	10	24	2
20	38	28	26	16	34	20	40	30	62	36	84	56	78	52	62	42	60	26	44	32	42	20	30	16
21	38	32	18	5	40	16	56	32	62	30	80	56	86	64	64	44	64	34	40	30	36	20	32	10
22	34	18	14	-4	40	26	40	38	77	40	76	50	80	64	52	47	68	34	40	28	28	10	24	14
23	32	10	32	-8	32	18	48	38	85	58	80	46	86	62	58	51	73	50	38	22	32	2	35	25
24	42	28	30	2	43	12	46	40	84	65	78	60	70	62	70	50	68	48	36	26	32	18	44	35
25	44	28	22	-10	40	30	50	38	64	46	68	46	72	60	74	44	52	38	52	32	39	30	52	44
26	34	16	26	4	32	28	65	32	68	41	76	40	80	53	66	48	64	34	56	28	52	40	52	44
27	26	14	10	-10	29	22	70	34	64	46	68	46	84	62	70	40	66	46	64	38	42	18	46	26
28	18	6	28	-12	34	12	63	34	48	39	70	40	90	60	74	40	52	28	60	40	34	16	26	16
29	18	2	30	16	40	20	64	26	47	34	76	40	86	56	80	48	48	28	52	39	42	24	24	7
30	24	10	---	---	30	14	72	29	56	36	86	56	68	51	81	54	56	38	40	32	26	18	28	16
31	30	6	---	---	22	8	---	---	62	34	---	---	68	45	78	60	---	---	38	25	---	---	34	14
AV.	26	8	25	4	36	18	47	28	68	42	70	45	78	56	68	46	61	38	51	31	40	23	30	15
MEAN	17.0		14.5		27.0		37.5		55.0		57.5		67.0		57.0		49.5		41.0		31.5		22.5	
STA AV	24	5	27	5	34	16	47	28	65	40	74	47	76	53	73	49	66	42	56	35	41	26	25	8

Notes: TEMPERATURE DATA IS FROM R-12. READINGS TAKEN DAILY FROM HYGROTHERMOGRAPH CHARTS. FOR OTHER TEMPERATURE VALUES FOR 1965, 1966, AND 1967, SEE PAGES 67.1-1.2. STA AV (STATION AVERAGE) BASED ON 1960-64 RECORDS.

1960 DAILY PRECIPITATION [inches]						NORTH DANVILLE, VERMONT				WATERSHED W-4				67.04	
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC			
1	0.00	0.00	0.00	0.16	0.25	0.16	0.00	0.00	0.00	0.00	0.60	0.05			
2	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.00			
3	0.71	0.04	0.00	0.46	0.00	0.00	0.17	0.00	0.00	0.00	0.09	0.00			
4	0.13	0.00	0.00	0.42	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00			
5	0.08	0.00	0.00	0.60	0.00	0.00	0.12	0.77	0.00	0.00	0.00	0.00			
6	0.00	0.03	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.40	0.00	0.00			
7	0.10	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10			
8	0.29	0.00	0.00	0.00	0.00	0.00	0.07	0.10	0.00	0.00	0.00	0.04			
9	0.00	0.10	0.00	0.08	0.38	0.00	0.10	0.00	0.00	0.00	0.10	0.01			
10	0.00	0.00	0.00	0.00	0.17	0.00	0.00	0.00	0.17	0.00	0.15	0.05			
11	0.00	0.90	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.09	0.00	0.00			
12	0.00	0.05	0.00	0.25	0.12	0.00	0.10	0.00	2.55	0.00	0.00	0.15			
13	0.00	0.00	0.00	0.00	0.28	0.00	0.00	0.00	0.15	0.00	0.00	0.00			
14	0.00	0.22	0.00	0.00	0.06	0.00	0.00	0.00	0.05	0.51	0.00	0.00			
15	0.00	0.04	0.00	0.00	1.05	1.10	0.00	0.00	0.00	0.00	0.52	0.00			
16	0.16	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.24	0.03	0.26			
17	0.04	0.00	0.35	0.00	0.00	0.55	0.00	0.00	0.00	0.00	0.00	0.00			
18	0.10	0.00	0.02	0.70	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00			
19	0.19	0.40	0.00	0.00	0.00	0.00	0.55	0.00	0.00	0.70	0.00	0.00			
20	0.02	0.10	0.00	0.00	0.00	0.00	0.00	0.30	0.15	0.25	0.00	0.00			
21	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.77			
22	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.20	0.00	0.00	0.00	0.03			
23	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.30	0.11	0.00			
24	0.00	0.04	0.00	0.24	0.34	1.17	0.00	0.00	0.00	0.94	0.00	0.00			
25	0.02	0.00	0.00	0.32	0.00	0.03	0.00	0.00	0.00	0.52	0.00	0.00			
26	0.00	0.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
27	0.04	0.00	0.00	0.12	0.00	0.00	0.25	0.00	0.00	0.00	0.00	0.05			
28	0.25	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.15	0.00			
29	0.00	0.30	0.00	0.00	0.00	0.15	0.00	0.20	0.03	0.00	0.72	0.08			
30	0.00		0.35	0.00	0.00	0.08	1.63	0.00	0.48	0.00	0.13	0.00			
31	0.00		0.69		0.21		0.00	0.00		0.00		0.00			
TOTAL	2.18	2.41	1.47	3.42	2.97	3.34	2.99	1.69	3.88	4.01	2.60	1.59			
STAV	3.16	2.76	2.72	2.36	2.12	2.74	1.76	3.41	3.08	6.12	3.99	2.59			

1961 DAILY PRECIPITATION (inches)						NORTH DANVILLE, VERMONT						WATERSHED W-4		67.04	
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC			
1	0.57	0.00	0.02	0.39	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.00			
2	0.00	0.00	0.03	0.07	0.62	0.84	0.56	0.00	0.45	0.00	0.00	0.00			
3	0.00	0.00	0.00	0.10	0.04	0.00	0.24	0.00	0.25	0.29	0.00	0.00			
4	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.15	0.23	0.18	0.25			
5	0.00	0.00	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.15	0.39			
6	0.00	0.00	0.27	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.05	0.00			
7	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.40	0.12			
8	0.15	0.00	0.06	0.00	0.00	0.69	0.87	0.00	0.00	0.00	0.00	0.00			
9	0.00	0.00	0.49	0.00	0.33	0.00	0.05	0.00	0.00	0.00	0.02	0.00			
10	0.00	0.00	0.00	0.34	0.20	0.55	0.30	0.00	0.00	0.00	0.00	0.03			
11	0.00	0.00	0.00	0.48	0.00	0.00	0.00	0.47	0.00	0.00	0.00	0.00			
12	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.45	0.00	0.00	0.00	0.07			
13	0.00	0.00	0.00	0.14	0.00	1.41	0.00	0.00	0.00	0.00	0.05	0.03			
14	0.00	0.07	0.21	0.11	0.00	0.02	0.00	0.00	0.00	0.60	0.14	0.00			
15	0.00	0.08	0.27	0.00	0.00	0.00	0.00	0.38	0.62	0.00	0.21	0.04			
16	0.00	0.00	0.17	0.79	0.77	0.00	0.95	0.16	0.00	0.00	0.04	0.00			
17	0.00	0.10	0.00	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.15			
18	0.00	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.10			
19	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.47			
20	0.05	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.25	0.24			
21	0.00	0.00	0.00	0.00	0.15	0.25	0.30	1.21	0.10	0.00	0.07	0.04			
22	0.00	0.00	0.00	0.13	0.01	0.90	0.00	0.08	0.00	0.00	0.00	0.00			
23	0.00	0.72	0.00	0.52	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
24	0.00	0.14	0.00	0.00	0.00	0.21	0.09	0.00	0.00	0.00	0.55	0.05			
25	0.00	0.77	0.00	0.00	0.00	0.18	0.32	0.07	0.00	0.00	0.00	0.00			
26	0.05	0.41	0.00	0.61	0.52	0.00	0.00	0.29	0.00	0.05	0.00	0.02			
27	0.00	0.00	0.00	0.00	0.16	0.00	0.00	0.00	0.00	0.00	0.10	0.03			
28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.41			
29	0.00	-----	0.00	0.00	0.07	0.00	0.00	0.10	0.00	0.03	0.06	0.00			
30	0.00	-----	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.33	0.00	0.00			
31	0.00	-----	0.00	-----	0.00	-----	0.00	0.00	-----	0.11	-----	0.00			
TOTAL	0.85	2.54	1.72	3.78	2.91	5.14	3.68	3.21	1.57	1.64	2.53	2.44			
ST. AVE	2.39	2.68	2.38	2.83	2.38	3.54	2.40	3.34	2.58	4.62	3.50	2.54			
Notes: DAILY PRECIPITATION VALUES FROM RAIN GAGE R-10. ALL PRECIPITATION IS RAIN EXCEPT FOR THE MONTHS OF DECEMBER, JANUARY, AND FEBRUARY, DURING WHICH ALL PRECIPITATION IS SNOW OR RAIN ON SNOW. STATION AVERAGE IS FOR 3-YR RECORD PERIOD 1959-1961.															
1962 DAILY PRECIPITATION (inches)						NORTH DANVILLE, VERMONT						WATERSHED W-4		67.04	
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC			
1	0.00	0.02	0.03	0.79	0.02	0.10	0.05	0.20	0.00	0.00	0.28	0.00			
2	0.00	0.00	0.00	0.01	0.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
3	0.08	0.10	0.00	0.00	0.27	0.00	0.00	0.00	0.00	0.00	0.25	0.00			
4	0.10	0.03	0.08	0.00	0.11	0.00	0.00	0.06	0.00	0.00	0.05	0.00			
5	0.13	0.07	0.12	0.00	0.00	0.04	0.00	0.00	0.25	0.75	0.00	0.00			
6	0.43	0.05	0.00	0.00	0.05	0.00	0.00	0.21	0.10	2.25	0.00	0.15			
7	0.25	0.00	0.00	0.72	0.00	0.00	0.00	0.33	0.00	0.90	0.00	0.05			
8	0.03	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05			
9	0.00	0.05	0.00	0.20	0.00	0.00	0.66	0.02	0.00	0.45	0.00	0.23			
10	0.00	0.05	0.00	0.05	0.00	0.00	0.00	0.47	0.88	0.15	0.27	0.09			
11	0.00	0.00	0.00	0.00	0.00	0.31	0.00	0.03	0.47	0.00	0.38	0.00			
12	0.00	0.00	0.25	0.04	0.00	0.00	0.05	0.00	0.00	0.25	0.00	0.00			
13	0.00	0.00	0.30	0.34	0.00	0.00	0.55	0.00	0.00	0.00	0.00	0.00			
14	0.00	0.06	0.00	0.16	0.18	0.00	0.00	0.40	0.05	0.00	0.00	0.00			
15	0.53	0.00	0.00	0.10	0.00	0.00	0.20	0.00	0.00	0.00	0.00	0.00			
16	0.03	0.30	0.00	0.03	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
17	0.00	0.14	0.00	0.00	0.00	0.00	0.00	0.00	1.10	0.05	0.00	0.00			
18	0.00	0.00	0.00	0.00	0.00	0.00	0.12	0.00	0.05	0.00	0.05	0.00			
19	0.00	0.32	0.00	0.00	0.00	0.89	0.00	0.00	0.08	0.00	0.00	0.05			
20	0.00	0.07	0.00	0.00	1.07	0.00	0.00	0.45	0.07	0.00	0.00	0.04			
21	0.00	0.00	0.00	0.00	0.03	0.00	0.22	0.10	0.00	0.16	0.13	0.00			
22	0.00	0.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.77	0.60			
23	0.00	0.17	0.00	0.14	0.00	0.81	0.37	0.00	0.00	0.08	0.00	0.10			
24	0.00	0.52	0.00	0.00	0.83	0.06	0.19	0.00	0.00	0.06	0.18	0.10			
25	0.00	0.15	0.00	0.00	0.00	0.60	0.00	0.00	0.00	0.10	0.00	0.00			
26	0.05	0.13	0.00	0.00	0.00	0.00	0.36	0.00	0.20	0.00	0.00	0.00			
27	0.10	0.04	0.03	0.00	0.00	0.00	0.05	0.00	0.36	0.04	0.00	0.00			
28	0.00	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.30	0.00	0.00			
29	0.00	-----	0.00	0.05	0.00	0.00	0.00	0.43	0.05	0.00	0.00	0.35			
30	0.28	-----	0.00	0.52	0.00	0.10	0.00	0.00	0.00	0.10	0.00	0.07			
31	0.02	-----	0.89	-----	0.00	-----	1.80	0.00	-----	1.07	-----	0.12			
TOTAL	2.03	2.32	1.71	1.78	2.91	2.91	4.62	2.70	3.71	6.71	2.36	2.00			
ST. AVE	2.30	2.59	2.21	2.92	2.51	3.38	2.95	3.18	2.86	5.14	3.22	2.40			
Notes: DAILY PRECIPITATION VALUES FROM RAIN GAGE R-10. ALL PRECIPITATION IS RAIN EXCEPT FOR THE MONTHS OF DECEMBER, JANUARY, AND FEBRUARY, DURING WHICH ALL PRECIPITATION IS SNOW OR RAIN ON SNOW. STATION AVERAGE IS FOR 4-YR RECORD PERIOD 1959-1962.															

1963 DAILY PRECIPITATION (inches)						NORTH DANVILLE, VERMONT WATERSHED W-4 67.04						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	0.02	0.00	0.08	0.00	0.28	0.00	0.00	0.14	0.00	0.00	0.58	0.01
2	0.00	0.80	0.04	0.10	0.00	0.00	0.42	0.60	0.00	0.00	0.22	0.00
3	0.00	0.05	0.00	1.00	0.00	0.00	0.00	0.00	0.27	0.05	0.19	0.24
4	0.00	0.08	0.14	0.33	0.00	0.00	0.33	0.58	0.03	0.00	0.05	0.00
5	0.00	0.17	0.01	0.00	0.28	0.00	0.08	0.00	0.00	0.00	0.00	0.00
6	0.00	0.07	0.54	0.00	0.00	0.11	0.00	0.00	0.00	0.00	0.08	0.00
7	0.00	0.06	0.07	0.00	0.00	0.00	0.31	0.00	0.00	0.00	0.26	0.00
8	0.00	0.00	0.10	0.00	0.42	0.00	0.55	0.00	0.00	0.06	0.46	0.00
9	0.00	0.00	0.00	0.00	0.00	0.01	0.02	0.25	0.00	0.00	0.39	0.56
10	0.00	0.00	0.15	0.15	0.64	0.00	0.00	0.00	0.00	0.00	0.16	0.08
11	0.09	0.00	0.00	0.02	0.30	0.15	0.00	0.05	0.00	0.20	0.40	0.07
12	0.22	0.41	0.22	0.00	0.00	0.05	0.00	0.00	0.25	0.00	0.10	0.19
13	0.34	0.07	0.23	0.00	0.00	0.00	0.00	0.95	0.00	0.00	0.01	0.14
14	0.00	0.03	0.02	0.00	0.06	0.00	0.15	0.52	0.00	0.00	0.04	0.03
15	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.32	0.00	0.00	0.00	0.05
16	0.00	0.00	0.00	0.00	0.00	0.15	0.00	0.00	0.00	0.00	0.06	0.00
17	0.00	0.00	0.25	0.00	0.00	0.35	0.00	0.00	0.00	0.00	0.00	0.00
18	0.00	0.00	0.01	0.45	0.23	0.00	0.17	0.18	0.00	0.00	0.48	0.03
19	0.00	0.16	0.00	0.20	0.00	0.00	0.10	0.00	0.05	0.03	0.05	0.03
20	0.22	0.13	0.28	0.15	0.26	0.05	0.00	0.00	0.00	0.00	0.00	0.03
21	0.05	0.12	0.02	0.54	0.02	0.63	0.45	0.00	0.00	0.00	0.10	0.00
22	0.00	0.00	0.00	0.01	0.04	0.02	0.00	0.00	0.05	0.00	0.00	0.00
23	0.55	0.00	0.00	0.10	0.05	0.30	0.00	0.52	0.00	0.00	0.48	0.03
24	0.05	0.13	0.00	0.31	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.12
25	0.00	0.02	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
26	0.00	0.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27	0.55	0.00	0.05	0.00	0.00	0.05	0.00	0.00	0.14	0.00	0.00	0.00
28	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.07
29	0.00	0.00	0.00	0.00	0.02	0.00	0.03	0.15	0.67	0.00	0.74	0.08
30	0.00	0.00	0.00	0.42	0.12	0.00	0.99	0.35	0.00	0.00	0.40	0.00
31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.00	0.00	0.00	0.00
TOTAL	2.14	2.30	2.21	3.82	2.72	1.57	3.69	4.84	1.48	0.34	5.25	1.81
STA AV	2.27	2.53	2.21	3.10	2.55	3.02	3.10	4.84	2.58	0.34	3.62	2.28
Notes: DAILY PRECIPITATION VALUES FROM RAIN GAGE R-10. ALL PRECIPITATION IS RAIN EXCEPT FOR THE MONTHS OF DECEMBER, JANUARY, AND FEBRUARY. DURING WHICH ALL PRECIPITATION IS SNOW OR RAIN ON SNOW. STATION AVERAGE IS FOR 5-YR RECORD PERIOD 1959-1963.												
1964 DAILY PRECIPITATION (inches)						NORTH DANVILLE, VERMONT WATERSHED W-4 67.04						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	0.18	0.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.12	0.06	0.00	0.27	0.00	0.00	0.20	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.47	0.00	0.10	0.40	0.00	0.00	0.35	0.00	0.19
4	0.06	0.05	0.42	0.02	0.00	0.36	0.00	0.00	0.45	0.02	0.00	0.85
5	0.00	0.19	1.09	0.00	0.00	0.00	0.05	0.05	0.00	0.03	0.45	0.14
6	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06
7	0.02	0.06	0.00	0.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	0.00	0.00	0.00	0.03	0.06	0.00	0.00	0.09	0.10	0.00	0.00	0.05
9	0.40	0.00	0.41	0.00	0.39	0.00	0.00	0.00	0.00	0.00	0.00	0.04
10	0.20	0.00	0.53	0.00	0.19	0.10	0.00	0.00	0.00	0.02	0.05	0.00
11	0.00	0.00	0.02	0.00	0.11	0.00	0.05	0.00	0.14	0.02	0.20	0.07
12	0.00	0.00	0.00	0.00	0.00	0.00	0.04	1.70	0.00	0.00	0.00	0.09
13	0.05	0.05	0.00	0.00	0.20	0.00	0.10	0.00	0.00	0.08	0.15	0.01
14	0.05	0.05	0.02	0.61	0.65	0.05	0.64	0.05	0.00	0.00	0.00	0.10
15	0.00	0.00	0.10	0.31	0.00	0.21	0.01	0.10	0.00	0.00	0.00	0.00
16	0.03	0.18	0.00	0.00	0.18	0.08	0.00	0.00	0.00	0.00	0.40	0.00
17	0.01	0.00	0.00	0.29	0.17	0.00	0.00	0.05	0.00	0.15	0.06	0.00
18	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.12	0.09	0.04
19	0.00	0.04	0.00	0.00	0.23	0.00	0.45	0.00	0.00	0.26	0.33	0.00
20	0.01	0.00	0.00	0.00	0.05	0.00	0.00	0.05	0.00	0.00	0.25	0.00
21	0.44	0.05	0.00	0.00	0.00	0.00	0.47	0.00	0.00	0.56	0.00	0.00
22	0.00	0.00	0.00	0.81	0.05	0.00	0.83	0.95	0.00	0.02	0.00	0.11
23	0.00	0.00	0.00	0.06	0.00	0.00	0.00	1.67	0.00	0.00	0.00	0.05
24	0.00	0.00	0.00	0.00	0.17	0.20	0.00	0.10	0.00	0.00	0.00	0.07
25	0.70	0.00	0.10	0.00	0.38	0.00	0.00	0.00	0.00	0.00	0.00	0.03
26	0.07	0.04	0.77	0.00	0.12	0.06	0.00	0.25	0.00	0.00	0.90	0.25
27	0.00	0.00	0.03	0.00	0.38	0.54	0.00	0.00	0.37	0.00	0.00	0.37
28	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.05	0.48
29	0.00	0.00	0.40	0.00	0.00	0.03	0.15	0.04	0.00	0.25	0.15	0.00
30	0.04	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.09
31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06
TOTAL	2.48	0.99	3.89	3.12	3.36	1.78	3.44	5.10	1.06	1.88	3.08	3.15
STA AV	2.30	2.28	2.49	3.10	2.69	2.81	3.16	3.77	2.33	3.80	3.53	2.43
Notes: DAILY PRECIPITATION VALUES FROM RAIN GAGE R-10. ALL PRECIPITATION IS RAIN EXCEPT FOR THE MONTHS OF DECEMBER, JANUARY, AND FEBRUARY. DURING WHICH ALL PRECIPITATION IS SNOW OR RAIN ON SNOW. STATION AVERAGE IS FOR 6-YR RECORD PERIOD 1959-1964.												

1965 DAILY PRECIPITATION (inches)						NORTH DANVILLE, VERMONT				WATERSHED W-4		67.04
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	1.35	0.73	0.06	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.02	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.05	0.62	0.00	0.00	0.24	0.00	0.00
4	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.35
5	0.00	0.05	0.00	0.00	0.00	0.00	0.74	0.00	0.00	0.00	0.00	0.00
6	0.06	0.00	0.00	0.00	0.00	0.00	0.01	0.05	0.00	0.00	0.00	0.06
7	0.00	0.55	0.00	0.16	0.00	1.47	0.00	0.64	0.00	0.25	0.00	0.00
8	0.04	0.14	0.00	0.09	0.00	0.02	0.25	0.46	0.02	0.35	0.72	0.00
9	0.15	0.03	0.00	0.00	0.08	0.08	0.00	0.25	0.00	0.03	0.13	0.00
10	0.00	0.57	0.00	0.00	0.00	0.30	0.09	0.76	0.47	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	0.00	0.15	0.00	0.55	0.00	0.39	0.00	0.77	0.00	0.32	0.00	0.15
13	0.10	0.00	0.00	0.20	0.00	1.41	0.00	0.50	0.25	0.00	0.15	0.20
14	0.05	0.00	0.00	0.00	0.00	0.15	0.08	0.00	0.00	0.00	0.10	0.20
15	0.00	0.05	0.00	0.15	0.00	0.00	0.02	0.00	0.25	0.59	0.00	0.05
16	0.02	0.00	0.00	0.23	0.00	0.25	0.00	0.00	0.00	0.00	0.60	0.09
17	0.05	0.00	0.00	0.02	0.13	0.00	0.09	0.00	0.00	0.00	1.17	0.02
18	0.00	0.21	0.05	0.00	0.00	0.20	1.46	0.60	0.05	0.00	0.08	0.00
19	0.00	0.04	0.05	0.00	0.00	0.00	0.00	0.35	0.15	0.00	0.00	0.05
20	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.05	0.00
21	0.00	0.00	0.00	0.20	0.00	0.14	0.00	0.00	0.00	0.00	0.15	0.02
22	0.00	0.00	0.15	0.05	0.04	0.01	0.00	0.00	0.00	0.14	0.00	0.00
23	0.00	0.00	0.04	0.09	0.00	0.38	0.00	0.10	0.04	0.81	0.00	0.00
24	0.44	0.00	0.00	0.00	0.00	0.12	0.10	0.00	0.86	0.03	0.00	0.35
25	0.00	0.45	0.00	0.00	0.00	0.00	0.00	0.00	0.55	0.00	0.10	0.18
26	0.27	0.00	0.21	0.29	0.00	0.00	0.00	0.95	0.00	0.00	0.26	0.02
27	0.06	0.00	0.04	0.03	0.05	0.00	0.10	0.00	0.00	0.10	0.82	0.03
28	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.50	0.00	0.15	0.07	0.00
29	0.00	---	0.13	0.00	0.00	0.00	0.09	0.14	0.00	0.00	0.04	0.00
30	0.00	---	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
31	0.00	---	0.00	---	0.35	---	0.00	0.00	---	0.19	---	0.00
TOTAL	1.46	2.32	0.69	2.06	0.80	4.97	3.65	6.07	4.05	4.01	4.51	1.86
STATION	2.18	2.28	2.24	2.95	2.42	3.12	3.23	4.10	2.58	3.83	3.67	2.35

Notes: DAILY PRECIPITATION VALUES FROM RAIN GAGE R-10. ALL PRECIPITATION IS RAIN EXCEPT FOR THE MONTHS OF DECEMBER, JANUARY, AND FEBRUARY, DURING WHICH ALL PRECIPITATION IS SNOW OR RAIN ON SNOW. STATION AVERAGE IS FOR 7-YR RECORD PERIOD 1959-1965.

1966 DAILY PRECIPITATION (inches)						NORTH DANVILLE, VERMONT				WATERSHED W-4		67.04
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	0.00	0.00	0.65	0.00	0.13	0.00	0.00	0.00	0.00	0.01	0.00	0.14
2	0.04	0.00	0.26	0.05	0.00	0.00	0.00	0.26	0.00	0.00	0.00	0.07
3	0.21	0.00	0.00	0.05	0.14	0.00	0.00	0.00	0.00	0.00	0.90	0.04
4	0.00	0.00	0.22	0.00	0.09	0.15	0.02	0.00	0.68	0.20	0.00	0.00
5	0.00	0.00	0.83	0.05	0.11	0.10	0.00	0.00	0.00	0.08	0.06	0.00
6	0.05	0.00	0.21	0.00	0.38	0.30	0.15	0.00	0.05	0.02	0.09	0.03
7	0.00	0.00	0.08	0.04	0.00	0.00	0.23	0.00	0.00	0.00	0.00	0.24
8	0.35	0.00	0.05	0.38	0.00	0.22	0.00	0.23	0.00	0.00	0.11	0.37
9	0.00	0.00	0.00	0.08	0.65	0.13	0.00	0.00	0.00	0.00	0.02	0.00
10	0.01	0.00	0.00	0.00	0.04	0.97	0.38	0.00	0.00	0.20	0.02	0.00
11	0.04	0.20	0.00	0.09	0.00	0.00	0.01	0.45	0.00	0.00	0.27	0.30
12	0.00	0.00	0.15	0.01	0.27	0.00	0.31	0.09	0.00	0.10	0.00	0.00
13	0.00	0.83	0.22	0.00	0.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14	0.05	0.07	0.02	0.00	0.00	0.14	0.00	0.00	0.09	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.18	0.00	0.00	0.17	0.00	0.00	0.00
16	0.00	0.05	0.00	0.00	0.00	0.34	0.00	0.56	0.00	0.06	0.20	0.02
17	0.00	0.10	0.00	0.00	0.10	0.04	0.00	0.58	0.00	0.00	0.03	0.00
18	0.00	0.05	0.02	0.00	0.42	0.00	0.05	0.00	0.00	0.00	0.06	0.03
19	0.11	0.00	0.00	0.00	0.83	0.00	0.40	0.00	0.00	0.22	0.00	0.00
20	0.00	0.00	0.10	0.00	0.16	0.02	0.00	0.00	0.00	1.11	0.00	0.00
21	0.03	0.15	0.00	0.10	0.00	0.01	0.05	0.00	0.30	0.00	0.00	0.00
22	0.00	0.10	0.05	0.00	0.00	0.00	0.00	0.46	1.06	0.00	0.00	0.00
23	0.12	0.00	0.01	0.00	0.00	0.00	0.00	0.50	0.24	0.00	0.00	0.00
24	0.05	0.30	0.38	0.15	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.30
25	0.00	0.47	0.54	0.00	0.00	0.25	0.00	0.09	0.10	0.00	0.17	0.30
26	0.00	0.00	0.00	0.00	0.00	0.08	0.49	0.06	0.00	0.00	0.00	0.02
27	0.11	0.00	0.05	0.00	0.00	0.00	0.17	0.06	0.00	0.00	0.00	0.00
28	0.00	0.07	0.00	0.00	0.00	0.00	0.25	0.00	0.00	0.00	0.00	0.03
29	0.00	---	0.00	0.00	0.00	0.50	0.00	0.00	0.11	0.09	0.08	0.87
30	0.24	---	0.15	0.09	0.00	0.00	0.00	0.32	0.04	0.00	0.55	0.05
31	0.00	---	0.00	---	0.00	---	0.00	0.00	---	0.00	---	0.00
TOTAL	1.41	2.09	3.99	1.09	3.64	3.43	2.44	3.66	2.90	2.09	2.56	2.81
STATION	2.08	2.26	2.45	2.72	2.57	3.16	3.13	4.05	2.62	3.61	3.53	2.40

Notes: DAILY PRECIPITATION VALUES FROM RAIN GAGE R-10. ALL PRECIPITATION IS RAIN EXCEPT FOR THE MONTHS OF DECEMBER, JANUARY, AND FEBRUARY, DURING WHICH ALL PRECIPITATION IS SNOW OR RAIN ON SNOW. STATION AVERAGE IS FOR 8-YR RECORD PERIOD 1959-1966.

1967	DAILY PRECIPITATION (inches)					NORTH DANVILLE, VERMONT					WATERSHED W-4		67.04
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	
1	0.12	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.00	0.00	
2	0.03	0.26	0.00	0.10	0.30	0.00	0.00	0.00	0.04	0.03	0.15	0.00	
3	0.00	0.00	0.02	0.10	0.70	0.00	0.35	0.06	0.02	0.00	0.10	0.41	
4	0.10	0.09	0.00	0.00	0.10	0.00	0.00	0.25	0.31	0.00	0.30	0.03	
5	0.15	0.03	0.22	0.00	0.10	0.00	0.00	0.00	0.04	0.55	0.00	0.00	
6	0.00	0.00	0.05	0.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
7	0.05	0.00	0.20	0.25	0.03	0.21	0.00	0.00	0.00	0.00	0.00	0.00	
8	0.00	0.00	0.01	0.00	0.32	0.14	0.00	0.00	0.00	0.01	0.00	0.30	
9	0.00	0.00	0.00	0.00	0.24	0.11	0.50	0.26	0.15	0.11	0.00	0.00	
10	0.00	0.00	0.00	0.55	0.01	0.00	0.00	0.00	0.75	1.60	0.00	0.00	
11	0.03	0.05	0.00	0.00	0.31	0.90	0.00	0.00	0.00	0.07	0.00	0.00	
12	0.08	0.00	0.00	0.00	0.07	0.00	0.93	0.00	0.00	0.00	0.11	1.28	
13	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.00	
14	0.07	0.00	0.00	0.00	0.00	0.11	0.00	0.05	0.00	0.06	0.04	0.00	
15	0.06	0.00	0.00	0.54	0.29	0.41	0.00	0.00	0.00	0.03	0.32	0.02	
16	0.00	0.38	0.00	0.32	0.03	0.08	1.73	0.00	0.00	0.00	0.00	0.00	
17	0.00	0.00	0.00	0.57	0.36	0.27	0.00	0.00	0.00	0.00	0.17	0.00	
18	0.00	0.00	0.00	0.35	0.15	0.05	0.06	0.00	0.00	1.24	0.13	0.04	
19	0.00	0.00	0.00	0.05	0.78	0.00	0.00	0.24	0.00	0.03	0.07	0.00	
20	0.00	0.26	0.00	0.00	0.11	0.03	0.00	0.15	0.00	0.02	0.05	0.00	
21	0.00	0.06	0.00	0.00	0.05	0.00	0.04	0.00	0.00	0.04	0.01	0.00	
22	0.00	0.00	0.00	0.34	0.20	0.23	0.00	0.16	0.30	0.02	0.05	0.03	
23	0.08	0.50	0.00	0.27	0.00	0.00	0.00	0.00	0.00	0.00	0.45	0.02	
24	0.00	0.01	0.00	0.05	0.00	0.23	0.40	0.00	0.34	0.00	0.05	0.00	
25	0.00	0.02	0.00	0.00	1.22	0.00	0.21	0.00	0.05	0.00	0.03	0.00	
26	0.00	0.00	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.94	0.03	0.11	
27	0.25	0.01	0.05	0.00	0.00	0.00	0.00	0.85	0.00	0.00	0.01	0.00	
28	0.20	0.06	0.05	0.00	0.00	0.00	0.34	0.50	0.03	0.00	0.09	0.35	
29	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.05	0.78	
30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.24	0.34	0.00	0.00	0.00	
31	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.00	0.00	0.00	0.00	0.14	
TOTAL	1.25	1.82	0.60	3.93	5.45	2.77	4.86	3.04	2.47	4.88	2.29	3.51	
STA AV	1.99	2.21	2.25	2.85	2.89	3.12	3.32	3.94	2.60	3.75	3.40	2.53	

Notes: DAILY PRECIPITATION VALUES FROM RAIN GAGE R-10. ALL PRECIPITATION IS RAIN EXCEPT FOR THE MONTHS OF DECEMBER, JANUARY, AND FEBRUARY, DURING WHICH ALL PRECIPITATION IS SNOW OR RAIN ON SNOW. STATION AVERAGE FOR 9-YR RECORD PERIOD 1959-1967.

1960	MEAN DAILY DISCHARGE (cfs)					NORTH DANVILLE, VERMONT					WATERSHED W-4		67.04
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	
1	16.84	17.49	17.98	141.26	69.46	27.31	8.69	9.36	.94	8.20	26.17	22.29	
2	23.51	16.90	16.67	89.05	70.30	40.49	6.10	5.35	.76	4.89	30.75	16.64	
3	48.36	16.31	16.26	77.70	66.51	21.37	6.59	4.15	.71	4.42	18.52	18.33	
4	60.53	16.09	16.37	176.51	62.74	17.66	11.79	3.21	.75	3.95	18.94	16.75	
5	36.35	16.08	15.74	176.46	58.83	14.48	7.76	7.94	1.20	3.45	15.80	19.37	
6	29.81	16.87	15.37	104.50	56.33	12.84	8.08	16.45	1.01	7.19	14.01	22.09	
7	28.46	18.98	15.18	87.32	55.73	10.97	6.20	6.32	.79	9.43	11.86	25.02	
8	27.61	16.85	15.18	79.26	55.73	9.71	4.99	4.69	.69	5.47	10.49	16.78	
9	25.02	17.10	14.77	79.10	60.79	8.99	5.71	3.71	.55	4.29	11.41	10.65	
10	24.51	16.05	13.97	76.24	90.01	8.37	4.39	3.02	.56	3.88	16.65	14.90	
11	22.95	42.26	13.10	79.19	57.19	7.56	3.57	2.85	.66	3.83	16.41	10.95	
12	21.16	83.07	13.20	105.25	52.59	7.06	3.14	2.26	37.55	3.77	13.18	12.04	
13	20.99	42.16	11.89	116.08	63.24	6.52	2.88	1.92	62.07	3.37	12.30	12.24	
14	20.66	30.45	12.98	114.97	78.96	5.81	3.05	1.84	19.96	9.04	11.98	12.40	
15	20.66	25.57	12.98	163.23	139.36	22.93	2.63	1.72	9.54	12.68	18.24	13.13	
16	20.20	22.50	13.49	155.26	182.53	26.51	2.07	1.98	6.01	10.31	38.64	13.80	
17	19.46	19.41	13.41	185.30	81.22	12.83	1.90	1.47	4.47	13.54	20.48	14.25	
18	19.35	19.78	13.66	236.91	60.06	31.11	2.15	1.22	3.78	8.17	15.80	13.58	
19	19.35	20.33	13.66	155.93	56.53	13.81	4.40	1.01	3.66	7.21	13.93	12.74	
20	19.35	19.35	13.66	114.89	54.54	9.96	13.36	1.66	4.47	42.57	12.81	11.92	
21	19.04	17.91	13.84	110.34	52.79	8.83	6.05	2.32	4.85	18.26	12.48	11.60	
22	18.93	17.84	13.51	112.32	51.44	7.00	3.73	3.03	4.07	10.79	12.08	12.65	
23	18.57	17.44	12.98	100.83	50.68	5.96	3.02	3.90	3.66	10.54	14.04	12.24	
24	18.18	16.90	12.77	97.65	76.35	13.35	2.27	2.50	3.25	57.99	13.55	11.60	
25	17.89	18.10	11.98	131.13	74.64	65.36	1.85	1.70	3.06	72.03	11.78	11.29	
26	17.81	19.79	11.57	95.71	40.08	21.59	1.62	1.35	2.82	38.63	10.98	11.60	
27	17.63	19.79	11.92	86.99	23.57	11.71	1.69	1.16	2.60	20.93	11.20	11.60	
28	17.99	18.15	13.49	75.52	17.99	8.53	3.26	.93	2.52	16.02	15.14	10.61	
29	18.10	17.64	15.70	68.48	16.14	6.81	2.33	.87	2.40	13.65	33.07	10.24	
30	18.36	0.00	25.02	68.26	14.24	9.71	13.46	1.45	2.58	12.18	50.05	10.53	
31	18.21	0.00	128.73	0.00	15.99	0.00	45.74	1.14	0.00	11.37	0.00	10.83	
MEAN	23.43	23.47	18.10	115.39	61.50	15.84	6.27	3.31	6.40	14.57	17.76	14.02	
INCHES	1.608	1.45	1.242	7.663	4.220	1.052	.430	.227	.425	1.000	1.179	.962	

Notes: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .002213695.

1961 MEAN DAILY DISCHARGE (cfs)						NORTH DANVILLE, VERMONT			WATERSHED W-4			67.04		
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC		
1	11.19E	6.07	23.06	42.25	79.76	24.23	18.91	8.85	7.34	2.88	10.47	8.60		
2	11.56	6.07	22.82	53.79	117.00	77.47	22.70	7.65	12.85	2.91	10.20	7.44		
3	11.37	5.57	25.34	41.91	97.07	44.91	52.90	7.46	17.89	3.40	7.21	8.06		
4	11.29	5.16	29.40	42.12	77.86	30.93	27.06	7.78	19.07	10.76	6.46	10.07		
5	11.29	5.45	23.93	51.42	70.48	25.85	21.58	6.87	16.08	7.95	12.79	52.59		
6	11.00	5.66	21.87	57.42	68.48	24.00	18.54	6.36	9.25	5.59	10.34	29.02		
7	10.86	5.86	23.91	58.70	67.81	20.74	17.39	5.67	7.06	4.78	18.21	17.45		
8	11.11	6.18	22.38	52.50	67.36	32.39	29.98	5.23	6.60	4.53	14.08	13.98		
9	10.83	6.29	18.61	49.77	67.51	54.99	46.10	4.78	5.96	4.12	9.75	8.52		
10	10.38	6.40	20.20	49.75	116.74	63.88	33.28	4.33	5.23	3.72	8.07	9.70		
11	10.38	6.51	18.82	48.52	69.53	64.44	33.50	4.29	4.81	3.66	6.49	11.62		
12	9.93	6.40	17.92	53.52	67.25	34.75	22.43	23.40	4.34	3.66	6.57	10.54		
13	9.45	6.08	16.93	51.61	66.69	63.08	17.80	9.57	4.20	3.66	6.97	10.36		
14	9.52	5.86	16.70	47.55	66.69	129.44	15.70	6.64	4.59	6.32	10.25	8.63		
15	9.52	5.97	17.19	54.01	65.23	50.02	15.18	5.42	12.99	12.80	10.17	6.16		
16	9.38	6.07	17.10	83.92	66.13	37.91	121.25	16.96	8.53	7.35	7.80	4.18		
17	9.24	5.97	16.05	108.47	47.80	31.92	39.66	9.62	5.74	5.76	14.45	3.99		
18	9.63	5.97	14.38	73.38	37.45	28.41	21.48	6.62	4.79	5.19	10.84	5.47		
19	8.91	7.56	15.46	70.41	34.22	24.75	16.91	5.42	4.46	4.78	7.73	8.40		
20	8.44	10.89	14.82	71.15	31.55	22.40	14.25	4.71	4.24	4.55	6.15	9.18		
21	8.01	9.74	14.19	83.53	31.84	25.54	18.02	34.98	4.71	4.47	7.83	8.97		
22	7.14	8.31	15.23	96.46	35.86	119.48	21.00	32.03	5.71	4.27	7.47	8.57		
23	6.41	9.50	17.97	173.83	31.31	51.95	13.89	15.23	4.56	4.23	8.54	8.44		
24	5.76	21.75	22.49	112.39	29.57	42.79	14.38	15.48	4.09	3.95	24.15	8.44		
25	6.30	31.69	23.04	103.49	27.37	44.22	29.26	9.32	3.94	3.82	31.29	8.44		
26	6.51	125.56	22.80	174.22	32.70	52.22	20.35	13.91	3.66	4.04	14.22	8.44		
27	6.51	71.06	28.58	115.69	55.03	37.39	12.57	13.93	3.21	4.19	10.77	8.44		
28	6.51	36.28	47.45	106.87	36.66	29.52	10.57	9.64	3.06	4.04	9.93	8.71		
29	6.51	-----	76.17	95.95	33.88	24.81	10.32	8.72	3.02	4.00	9.09	8.71		
30	6.40	-----	49.31	85.73	31.45	21.70	13.20	10.29	2.92	7.14	9.39	7.94		
31	6.18	---	40.16	-----	26.26	-----	10.18	7.90	-----	9.04	-----	7.20		
MEAN	8.95	15.71	24.33	77.01	56.60	44.54	25.17	10.61	6.83	5.21	10.92	10.85		
INCHES	.6143	.974	1.670	5.114	3.887	2.958	1.727	.728	.454	.358	.725	.744		

Notes: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .002213695.

1962 MEAN DAILY DISCHARGE (cfs)						NORTH DANVILLE, VERMONT				WATERSHED W-4				67.04	
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC			
1	5.28	6.68	6.74	204.48	72.35	17.65	4.78	30.35	4.77	8.64	106.28	23.69			
2	7.26	6.18	6.74	122.50	74.39	18.13	4.03	14.22	4.40	8.31	46.52	23.57			
3	7.26	6.18	6.74	61.00	85.05	16.02	3.32	8.74	3.75	7.63	37.26	23.24			
4	7.70	6.57	6.62	58.31	67.03	14.04	2.92	6.80	3.21	7.48	45.04	24.06			
5	7.29	7.17	6.51	72.38	61.01	13.53	2.75	8.47	3.41	12.53	38.68	23.25			
6	7.65	8.91	6.51	84.87	50.91	14.62	2.65	7.19	7.67	146.96	32.57	31.77			
7	13.55	8.91	6.62	187.57	44.40	11.61	2.40	16.87	5.89	253.03	29.45	34.07			
8	16.96	7.87	6.74	213.27	36.73	10.74	2.14	17.17	4.42	76.36	30.60	26.02			
9	11.88	7.32	6.74	151.72	33.19	9.50	9.24	10.00	3.70	77.82	31.20	24.02			
10	10.06	6.91	6.89	149.00	31.52	8.4	10.40	9.89	9.06	65.24	35.29	24.07			
11	9.11	6.29	7.33	96.10	30.19	12.11	5.18	26.38	34.20	53.04	74.02	18.15			
12	8.16	5.71	7.66	88.42	28.55	11.47	5.98	14.62	13.81	43.25	44.15	13.73			
13	7.23	5.45	7.68	90.93	27.30	9.22	14.67	9.47	9.92	38.86	33.88	14.43			
14	6.62	5.45	7.61	77.64	30.72	7.88	10.02	11.31	7.88	30.83	32.24	15.54			
15	7.58	5.66	7.68	68.46	31.41	6.80	8.51	24.98	7.15	27.95	30.04	14.44			
16	27.25	5.86	7.59	60.66	30.23	5.92	6.73	11.61	5.92	26.80	27.47	14.19			
17	23.22	5.86	7.60	55.14	28.10	5.21	7.69	8.92	6.20	27.43	25.87	13.66			
18	18.46	5.97	7.59	52.97	25.66	4.74	6.05	7.39	48.61	24.76	25.26	13.49			
19	15.27	5.97	7.67	54.99	24.67	17.29	5.94	6.08	16.67	22.94	21.93	14.11			
20	11.97	5.86	7.95	58.71	25.27	18.02	4.58	5.96	11.77	22.36	25.78	14.30			
21	10.10	5.97	8.20	63.85	101.21	10.87	5.26	14.49	9.88	24.86	25.18	10.57			
22	9.24	6.07	8.76	68.60	37.60	7.87	5.13	13.01	9.04	25.95	70.90	10.10			
23	9.24	6.07	9.80	91.45	28.91	13.70	3.90	8.03	9.07	24.04	46.78	12.50			
24	9.04	6.18	10.23	68.63	40.50	19.67	13.82	6.08	7.02	23.23	32.83	14.37			
25	8.97	6.29	10.70	56.06	54.30	27.81	8.06	5.11	6.62	23.27	29.45	14.64			
26	8.77	6.29	11.05	56.15	31.47	13.36	6.70	4.48	9.37	22.48	23.00	14.46			
27	8.71	6.40	14.93	68.14	25.27	8.81	9.95	4.20	15.48	21.65	23.02	13.58			
28	8.35	6.62	21.75	70.94	22.37	6.65	8.39	4.15	16.42	25.24	23.30	12.98			
29	7.00	-----	38.43	67.94	19.90	5.65	5.45	7.60	11.40	36.18	23.39	12.65			
30	6.60	-----	76.15	93.93	18.49	4.93	4.98	10.56	9.66	25.55	23.29	12.88			
31	6.74	---	137.81	-----	17.70	-----	68.44	6.09	-----	77.22	-----	12.81			
MEAN	10.40	6.45	15.84	90.49	39.88	11.76	8.39	10.98	10.55	42.32	36.49	17.59			
INCHES	.714	.400	1.087	6.010	2.737	.781	.576	.753	.700	2.904	2.423	1.207			

Notes: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .002213695.

1963 MEAN DAILY DISCHARGE (cfs)						NORTH DANVILLE, VERMONT		WATERSHED W-4				67.04
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	6.20	9.24	7.68	79.42	148.39	19.14	3.43	3.14	7.72	5.20	6.22	25.57
2	12.24	9.24	7.68	81.61	89.61	17.32	3.11	4.65	4.73	3.97	11.17	15.53
3	12.48	9.24	7.68	143.87	76.70	15.57	4.62	11.35	3.73	3.50	10.10	16.65
4	12.56	9.18	7.68	121.71	77.25	14.75	3.45	12.62	8.42	3.78	7.10	16.94
5	12.56	8.97	7.68	76.98	95.52	13.56	6.63	16.20	5.67	3.51	7.21	13.47
6	12.81	8.97	7.93	68.76	70.95	12.72	4.87	7.99	4.08	3.16	8.23	20.69
7	12.71	8.97	8.18	78.44	59.85	12.96	4.47	5.02	3.28	2.83	17.10	20.05
8	12.56	8.97	7.99	80.76	62.74	11.03	19.32	4.11	2.73	2.71	20.54	14.04
9	12.56	8.97	8.12	69.22	77.72	10.57	19.94	3.34	2.38	2.90	37.22	37.30
10	12.56	8.97	8.18	58.76	59.02	9.81	9.14	3.83	2.16	2.62	21.38	37.17
11	13.07	8.97	8.18	58.01	90.27	9.02	6.90	3.31	1.97	2.62	26.01	26.22
12	13.23	8.97	8.18	97.25	81.62	11.73	5.45	3.44	2.04	3.74	25.86	22.59
13	13.23	8.97	8.18	95.30	69.30	11.68	4.39	7.07	4.08	3.53	18.95	25.92
14	12.72	8.97	8.18	88.78	51.04	9.08	4.17	36.32	3.34	3.14	14.66	15.48
15	12.01	8.97	8.06	92.01	43.94	8.38	4.77	21.43	2.70	2.97	12.16	12.97
16	11.14	8.57	8.00	112.23	38.82	8.17	4.92	14.89	2.35	2.73	11.33	11.44
17	10.68	8.44	8.49	110.04	35.66	10.67	3.93	8.15	2.12	2.57	11.42	10.26
18	10.16	8.44	9.05	174.34	38.32	12.98	3.85	8.27	1.99	2.52	13.66	9.78
19	10.09	8.44	8.75	118.33	44.98	8.40	5.52	6.59	1.85	2.52	27.50	10.01
20	10.38	8.64	8.83	184.59	42.82	6.93	3.80	5.24	1.83	2.44	15.93	9.28
21	11.09	8.51	8.96	176.32	47.50	27.85	3.44	4.76	1.83	2.33	13.01	8.34
22	10.53	8.44	8.95	194.25	39.47	15.98	3.74	3.68	1.79	2.22	13.41	8.18
23	10.16	8.44	8.69	112.18	36.28	11.52	2.82	6.70	1.72	2.19	17.84	7.79
24	10.47	8.44	8.87	111.65	33.28	8.38	2.41	7.38	1.59	2.27	35.63	8.09
25	10.09	8.44	10.37	96.75	29.58	6.68	2.05	4.84	1.53	2.30	16.10	9.29
26	9.59	8.25	16.29	85.87	27.62	5.55	1.66	3.84	1.58	2.31	12.92	9.21
27	9.59	7.81	27.51	78.15	25.29	4.73	1.40	3.25	1.52	2.27	12.65	8.02
28	9.72	7.68	53.53	77.76	23.52	4.85	1.12	2.78	1.88	2.27	11.45	7.56
29	9.52	---	---	51.71	22.36	4.20	.95	2.90	4.76	2.22	14.02	7.44
30	9.52	---	---	70.68	120.65	23.91	3.92	8.47	4.09	9.73	71.18	7.44
31	9.31	---	---	73.87	22.16	---	---	5.32	13.98	---	---	6.65
MEAN	11.15	8.72	16.20	104.20	54.37	10.94	5.16	7.91	3.24	2.83	18.07	14.82
INCHES	.765	.541	1.112	6.920	3.730	.726	.354	.543	.215	.194	1.200	1.020

Notes: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .002213695.

1964 MEAN DAILY DISCHARGE (cfs)						NORTH DANVILLE, VERMONT		WATERSHED W-4				67.04
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	6.73	10.83	6.93	17.89	57.17	18.75	4.13	2.00	4.63	3.45	6.47	9.19
2	6.81	10.83	7.04	18.93	49.72	17.84	3.51	1.84	3.99	3.26	6.06	7.38
3	7.32	10.50	7.86	18.26	43.06	15.50	5.76	1.91	3.51	5.54	5.45	8.10
4	7.62	9.86	9.88	16.87	38.81	26.83	12.21	1.60	5.37	5.52	5.21	9.60
5	7.81	9.66	132.99	17.58	35.06	24.68	6.76	1.53	10.37	4.10	6.07	10.73
6	7.93	9.52	92.81	18.42	32.39	17.76	5.20	1.53	6.16	3.74	16.44	11.55
7	7.81	9.74	49.99	29.92	30.95	15.18	5.22	1.51	4.56	3.41	10.31	11.02
8	7.49	9.56	41.32	76.82	30.58	15.65	5.32	1.49	4.15	3.13	8.05	10.95
9	7.32	9.11	31.20	55.35	51.28	13.45	4.43	3.68	4.15	3.14	7.38	10.53
10	7.74	8.57	26.20	52.12	49.43	12.14	3.66	2.33	4.15	3.32	7.34	10.45
11	7.93	7.84	22.89	65.74	49.00	14.22	3.60	1.78	4.57	3.43	8.05	9.66
12	7.81	7.68	24.35	74.44	37.21	10.97	3.60	8.66	6.77	3.43	10.97	11.39
13	7.33	7.71	22.71	100.09	31.07	9.54	3.43	16.67	4.52	3.59	10.16	14.81
14	6.90	7.93	21.44	207.29	90.38	9.52	5.80	5.58	3.81	4.22	10.16	14.33
15	6.18	7.81	30.76	204.07	58.78	9.66	8.43	5.03	3.43	4.15	7.87	12.18
16	6.41	7.95	29.85	146.70	40.99	12.87	4.53	5.59	3.11	3.73	8.92	9.81
17	6.62	7.79	21.43	115.69	54.57	9.35	3.30	3.98	3.03	3.45	22.98	10.24
18	6.89	7.81	21.40	118.41	34.56	7.62	2.63	3.90	3.15	7.64	11.52	9.75
19	6.94	8.06	19.32	107.22	37.01	6.91	5.63	3.04	3.10	9.03	7.47	9.13
20	7.17	8.31	18.88	84.94	38.44	6.31	5.25	2.56	2.79	8.71	16.93	8.77
21	11.52	8.44	19.93	78.00	29.51	5.56	3.76	2.50	2.59	17.21	15.02	8.63
22	18.63	8.31	22.12	136.14	27.07	4.91	20.39	7.60	2.52	13.90	9.72	8.44
23	14.45	7.81	21.51	130.38	24.41	4.21	22.61	84.30	2.64	9.52	6.63	8.44
24	10.74	3.84	21.34	89.07	20.93	4.17	8.48	61.78	2.34	7.55	9.86	9.85
25	18.49	7.71	23.38	78.42	44.53	5.39	6.32	31.18	2.04	6.51	9.08	50.23
26	41.16	8.15	30.75	75.93	29.57	4.80	5.12	21.47	2.08	6.27	59.07	108.37
27	23.81	8.00	36.98	75.36	30.96	13.61	4.23	14.69	2.17	6.12	56.66	60.99
28	16.05	6.74	24.47	76.82	42.58	8.15	3.32	7.38	6.59	5.70	22.01	26.33
29	13.00	6.51	24.07	73.50	29.18	5.51	2.61	5.78	4.90	5.80	24.10	23.40
30	12.17	---	21.99	64.32	23.26	5.05	2.65	5.21	3.95	10.62	16.31	22.61
31	11.15	---	19.35	---	20.36	---	2.45	5.01	---	8.15	---	22.09
MEAN	10.84	8.37	29.20	80.82	39.12	11.20	5.947	10.42	4.04	6.04	14.08	18.03
INCHES	.744	.537	2.004	5.370	2.685	.744	.408	.715	.268	.415	.935	1.237

Notes: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .002213695.

1965 MEAN DAILY DISCHARGE (cfs)						NORTH DANVILLE, VERMONT						WATERSHED W-4		67.04	
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC			
1	15.97	8.97	10.91	10.37	54.25	9.49	3.87	1.99	47.88	32.32	29.15	27.68			
2	15.29	8.97	10.69	10.56	47.28	8.06	3.14	1.93	57.48	41.03	22.98	27.16			
3	17.90	8.84	13.53	10.68	40.77	7.21	6.90	1.88	14.09	25.64	21.79	26.26			
4	15.93	8.64	23.47	12.20	34.47	7.14	10.41	1.68	11.06	36.41	22.71	43.91			
5	14.25	8.31	34.74	14.78	29.58	5.98	7.77	1.44	9.80	23.49	20.73	39.24			
6	14.24	8.18	47.08	20.00	26.82	5.16	22.82	1.25	10.24	20.02	20.22	30.45			
7	14.00	8.19	54.54	20.67	25.33	11.86	9.02	2.52	8.53	18.71	20.22	24.11			
8	14.89	22.32	62.12	21.62	25.12	36.41	10.01	8.19	7.77	45.58	27.20	20.66			
9	17.73	34.15	42.21	25.46	25.47	14.20	7.91	15.22	8.27	40.35	66.68	21.80			
10	21.82	22.99	31.92	44.36	28.18	12.12	7.55	30.30	16.86	28.29	30.01	25.23			
11	16.52	17.51	25.01	44.82	28.45	10.32	6.81	13.95	12.22	23.31	24.69	20.25			
12	13.85	14.48	19.53	58.04	23.71	8.10	4.79	7.61	8.56	32.43	24.14	20.02			
13	13.07	14.04	19.27	61.94	20.96	71.31	3.91	43.91	8.61	29.17	27.16	21.00			
14	13.32	13.09	18.42	51.62	19.16	40.97	3.79	15.00	11.88	23.71	30.12	22.71			
15	11.51	12.06	16.89	55.95	18.09	23.12	4.49	8.13	12.13	27.26	22.85	22.94			
16	10.92	11.40	15.69	94.52	17.29	16.06	3.10	5.72	15.91	45.57	37.88	22.94			
17	11.29	10.79	15.79	59.56	18.85	14.11	2.74	4.67	10.78	26.75	124.62	22.02			
18	10.64	10.83	15.81	46.98	18.57	17.38	41.20	18.09	9.80	22.95	56.88	20.88			
19	9.80	10.52	15.87	45.49	17.40	13.88	23.13	16.83	11.46	21.33	40.20	16.23			
20	9.80	9.96	14.83	52.13	16.05	10.61	10.04	14.19	13.88	20.22	36.01	14.05			
21	9.80	9.66	13.03	62.53	13.99	8.97	7.48	7.80	11.49	19.15	33.55	18.74			
22	9.66	9.45	12.08	91.11	13.24	9.30	5.51	5.80	9.27	18.65	34.45	18.29			
23	9.52	9.04	12.48	61.46	13.11	7.88	4.87	5.63	7.96	52.18	33.86	16.70			
24	9.52	8.76	12.29	48.03	11.84	14.87	4.55	4.69	13.53	45.60	30.97	17.91			
25	9.66	9.39	11.77	43.64	11.00	9.21	4.81	4.33	85.85	29.03	29.56	19.54			
26	9.66	17.28	11.92	45.34	10.21	6.93	3.87	6.71	26.77	24.41	29.15	20.90			
27	9.66	19.82	11.67	56.43	9.80	5.76	3.23	26.64	16.91	23.91	40.92	17.30			
28	9.80	12.69	11.61	48.01	9.76	5.26	3.16	25.10	14.28	24.63	38.08	16.12			
29	9.66	-----	10.74	51.98	8.48	4.51	2.84	14.30	13.41	22.97	32.43	15.55			
30	9.38	-----	10.97	53.07	8.44	4.00	2.52	11.24	12.41	22.01	28.78	15.37			
31	9.25	-----	10.74	-----	8.58	-----	2.22	9.50	-----	26.16	-----	16.15			
MEAN	12.53	12.87	20.57	44.11	21.10	14.01	7.69	10.85	17.30	28.81	34.60	22.00			
INCHES	.860	.798	1.411	2.929	1.448	.930	.528	.744	1.149	1.977	2.298	1.510			

Notes: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .002213695.

1966 MEAN DAILY DISCHARGE (cfs)						NORTH DANVILLE, VERMONT						WATERSHED W-4		67.04	
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC			
1	23.30	9.80	15.41	26.70	64.80	22.80	10.06	2.38	4.42	5.28	5.79	18.34			
2	25.04	9.80	27.99	25.50	50.17	21.28	7.60	2.21	3.11	4.92	6.07	12.68			
3	20.48	9.80	30.03	26.33	44.75	19.75	6.46	4.40	2.61	4.27	34.35	8.21			
4	17.01	9.80	20.39	26.61	48.22	18.33	5.72	3.71	10.28	3.96	22.54	10.70			
5	17.09	9.80	32.86	25.95	38.36	26.29	4.92	2.48	13.69	5.76	12.48	7.49			
6	16.51	9.95	30.27	33.57	46.37	28.86	4.94	1.82	6.30	6.34	11.92	8.82			
7	16.32	9.53	37.27	40.44	45.30	20.57	6.73	1.59	4.77	5.77	11.43	9.55			
8	14.55	8.71	26.24	44.27	33.70	20.93	5.76	2.09	3.82	4.68	11.79	21.13			
9	13.75	8.44	22.65	46.47	44.66	23.01	4.43	1.86	3.15	4.10	12.63	30.02			
10	13.58	8.61	23.14	46.26	51.79	26.90	4.54	3.22	2.73	3.99	11.31	36.96			
11	13.41	13.41	21.36	44.74	47.71	45.39	7.86	5.81	2.19	6.56	24.60	58.91			
12	12.57	24.89	19.11	46.48	52.07	26.94	8.85	8.24	1.87	6.44	16.15	23.43			
13	11.60	19.76	20.00	45.36	78.46	20.91	9.55	4.39	1.91	6.57	11.80	13.34			
14	11.29	22.81	19.57	69.41	57.29	18.57	5.61	2.95	1.91	5.79	9.88	16.47			
15	11.29	17.36	18.60	75.87	49.48	21.07	4.04	2.22	2.47	5.13	9.64	13.41			
16	10.98	14.10	17.17	71.94	46.63	36.37	3.34	2.49	3.47	5.16	7.28	8.71			
17	10.68	13.49	17.36	78.10	48.18	34.35	2.76	28.52	2.92	5.40	10.18	13.94			
18	10.83	12.08	20.37	79.89	44.57	20.52	2.56	9.03	2.38	4.93	14.18	14.35			
19	10.98	10.99	27.04	80.70	144.08	16.36	4.47	5.01	2.11	4.58	13.50	8.85			
20	11.13	9.69	30.89	73.18	89.14	14.38	7.83	3.36	1.96	42.62	7.81	6.67			
21	11.44	9.18	35.62	88.17	62.15	12.26	4.39	2.59	1.78	21.99	6.86	8.27			
22	11.60	8.97	40.90	119.15	50.30	10.70	3.86	4.03	26.59	12.80	6.87	8.58			
23	11.60	9.11	51.09	90.24	44.35	10.01	3.00	13.19	29.18	9.86	6.60	7.27			
24	11.60	9.24	71.62	90.04	40.37	9.14	2.81	13.82	13.74	8.42	7.50	6.49			
25	11.44	9.24	202.40	85.79	36.38	12.16	2.28	7.21	9.01	7.20	9.46	8.71			
26	11.13	9.38	71.53	69.32	34.01	15.90	4.99	5.28	6.74	6.68	15.75	8.10			
27	10.68	9.52	41.03	52.32	31.19	11.56	4.86	3.97	5.59	6.14	13.30	9.10			
28	10.24	9.66	37.86	47.20	29.43	8.63	3.76	4.41	4.98	6.07	12.39	9.02			
29	9.95	-----	28.11	42.72	27.53	11.93	7.34	3.27	4.81	5.96	13.85	8.89			
30	9.95	-----	25.26	47.18	24.63	19.92	4.90	3.28	5.51	5.85	20.11	9.38			
31	9.95	-----	28.11	-----	23.54	-----	3.15	6.68	-----	5.17	-----	9.78			
MEAN	13.29	11.68	35.85	58.00	49.34	21.79	5.27	5.34	6.20	7.69	12.60	14.05			
INCHES	.912	.724	2.460	3.852	3.386	1.447	.362	.366	.412	.528	.837	.964			

Notes: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .002213695.

1967 MEAN DAILY DISCHARGE (cfs)						NORTH DANVILLE, VERMONT							WATERSHED W-2		67.0+	
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC				
1	7.90	8.71	6.40	56.07	54.77	36.11	9.88	10.53	11.91	11.37	17.23	12.93				
2	10.16	8.71	6.26	102.78	57.25	32.57	8.94	7.95	7.75	11.56	16.55	13.19				
3	9.41	8.54	6.29	145.10	143.77	29.79	14.44	7.04	6.85	9.11	30.39	18.54				
4	9.42	8.38	6.29	75.20	76.93	27.26	15.84	16.84	6.59	7.10	27.80	19.83				
5	9.52	8.09	6.19	57.30	74.69	24.94	10.29	18.70	9.57	11.82	30.19	15.65				
6	9.34	7.78	6.27	57.38	59.59	22.89	9.08	9.59	6.96	17.71	21.56	13.75				
7	13.59	7.50	6.16	48.20	50.79	21.37	7.65	7.86	5.34	10.75	19.85	13.79				
8	13.26	7.23	6.20	45.64	64.31	24.66	6.97	6.32	4.53	8.47	18.85	14.23				
9	9.87	7.04	6.17	52.70	66.35	29.30	7.34	5.96	4.20	8.30	17.02	14.64				
10	9.01	7.00	6.52	124.12	70.44	22.36	15.73	10.15	25.50	28.08	17.28	13.59				
11	8.97	6.97	8.29	68.77	57.32	28.60	8.95	7.45	12.04	95.55	15.64	12.72				
12	8.71	6.97	9.80	49.84	73.58	49.95	30.37	6.49	7.29	25.42	18.41	73.38				
13	8.79	6.30	11.12	50.28	49.77	27.67	18.52	5.51	5.70	17.55	26.03	95.55				
14	8.57	6.07	8.71	58.92	42.77	23.93	10.34	5.03	4.96	14.49	19.90	42.49				
15	8.91	6.26	8.28	86.93	50.03	51.98	7.90	4.74	4.21	14.34	15.98	28.84				
16	8.57	7.80	8.18	86.71	57.49	39.29	67.11	4.22	3.73	12.79	15.64	21.71				
17	8.48	9.52	8.86	65.13	43.52	28.43	27.22	3.87	3.50	12.20	16.86	22.85				
18	8.20	7.89	9.84	92.28	80.36	36.03	15.39	3.51	3.32	28.90	20.19	23.30				
19	7.68	7.05	10.09	72.75	103.75	22.59	12.86	3.55	3.19	86.39	18.94	28.59				
20	7.26	6.56	9.90	70.84	100.61	18.76	11.40	6.08	2.96	28.32	17.23	31.28				
21	7.20	6.54	8.26	64.12	61.53	17.38	10.52	5.57	2.79	22.42	14.32	24.03				
22	7.26	6.62	7.43	91.06	51.15	24.42	26.95	4.61	5.50	22.11	15.50	27.20				
23	7.71	6.48	6.41	105.37	57.20	24.77	12.64	4.98	7.13	19.79	24.70	25.36				
24	9.98	6.74	6.35	80.34	44.30	18.29	19.51	3.82	5.46	21.12	37.75	14.97				
25	11.21	6.97	6.58	65.24	72.04	16.78	19.51	3.10	13.71	24.02	23.60	14.79				
26	10.38	6.65	7.80	60.48	117.15	18.56	19.29	2.68	9.07	87.82	20.58	19.29				
27	9.80	6.18	10.97	61.19	71.76	13.16	11.27	6.75	6.33	44.34	20.36	12.95				
28	9.89	6.46	17.22	59.88	55.70	11.55	13.87	34.46	5.32	30.25	18.00	15.80				
29	9.39	-----	26.52	57.65	46.86	10.39	15.14	11.82	5.48	23.92	15.28	16.90				
30	8.78	-----	32.32	54.64	41.27	9.77	10.23	7.29	16.73	19.74	12.76	18.01				
31	8.67	-----	34.77	-----	38.15	-----	9.33	16.40	-----	17.74	-----	17.69				
MEAN	9.22	7.25	10.34	72.23	65.65	25.45	15.63	8.16	7.25	25.60	20.15	23.80				
INCHES	6.33	4.49	7.09	4.797	4.505	1.690	1.072	.560	.482	1.757	1.338	1.633				

Notes: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .00213695.

1965 SELECTED RUNOFF EVENT			NORTH DANVILLE, VERMONT				WATERSHED W-4				67.04
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)	
Event of June 7, 8 and 9, 1965											
6- 7	.00	1/.003	6- 7	RG	R-10		6- 7	0703	4.870	.0000	
				0445	.0000	.00		0733	5.254	.0002	
				0510	.4080	.17		1133	6.074	.0023	
				1520	.0000	.17		1530	6.074	.0046	
				1550	.9000	.62		1603	8.443	.0049	
				1610	.0000	.62					
				1620	.3600	.63		1630	9.522	.0053	
				1640	.1200	.72		1706	9.522	.0058	
				1740	.0000	.72		1800	10.990	.0066	
				1800	.1200	.76		1822	11.916	.0070	
				1900	.0000	.76		1915	13.576	.0080	
				1910	2.4600	1.17		2006	16.121	.0092	
				1940	.0900	1.21		2037	18.512	.0100	
				2118	.0000	1.21		2058	20.656	.0106	
				2120	5.1000	1.38		2119	25.370	.0113	
				2140	.1200	1.42		2131	27.945	.0118	
				2310	.0000	1.42		2152	33.547	.0128	
				2350	.0750	1.47		2216	39.768	.0142	
								2246	44.626	.0162	
								2315	50.301	.0183	
								2400	53.361	.0219	
6- 8							6- 8	0034	56.529	.0248	
								0130	60.643	.0298	
								0200	60.643	.0327	
								0300	62.337	.0383	
								0443	56.529	.0477	
								0613	48.811	.0550	
								0707	45.203	.0589	
								0930	39.117	.0682	
								1219	32.960	.0775	
								1546	27.418	.0872	
6- 9							6- 9	1728	24.872	.0913	
								2113	20.216	.0991	
								2400	18.099	.1040	
								0301	15.121	.1088	
								0925	14.277	.1164	

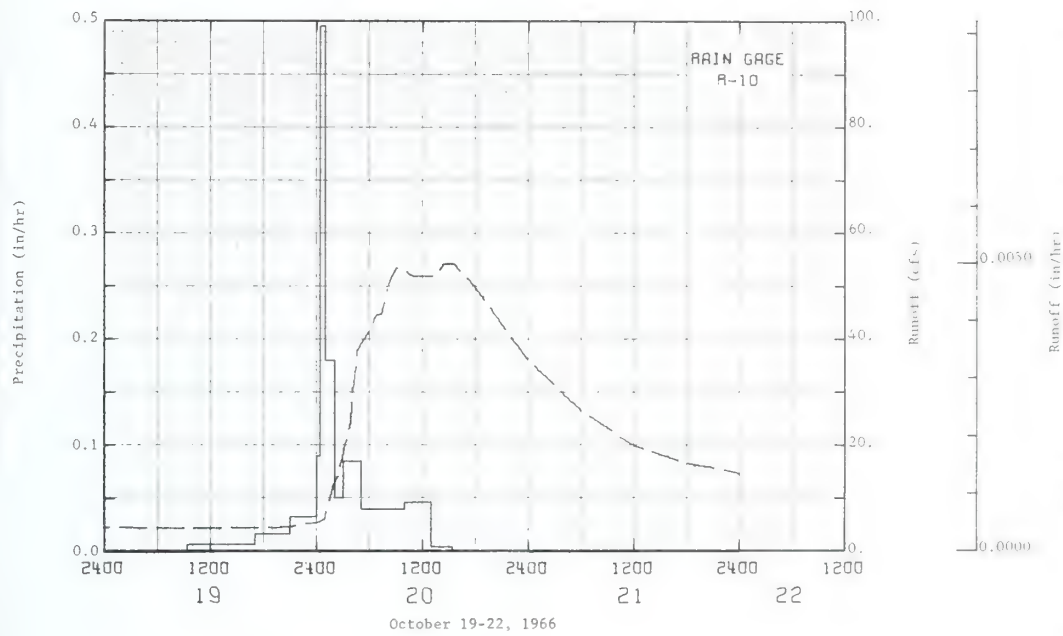
NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY .000092. FOR 30-DAY ANTECEDENT TEMPERATURE, RAINFALL AND RUNOFF SEE P. 67.1-1, 67.4-7 AND 67.4-11 RESPECTIVELY. 1/ RUNOFF PRIOR TO 0703 ON 6-7-65.



1966 SELECTED RUNOFF EVENT			NORTH DANVILLE, VERMONT				WATERSHED W-4				57.04
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in./hr.)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)	
			Event of October 19, 20 and 21, 1966								
10-19	.00	1/.003	10-19	RG	R-10		10-19	0600	4.327	.0000	
				0921	.0000	.00		1200	4.327	.0024	
				1659	.0066	.05		1344	4.504	.0031	
				2059	.0175	.12		1759	4.504	.0049	
				2400	.0331	.22		2100	4.870	.0062	
			10-20	0020	.0900	.25	10-20	2400	5.655	.0077	
				0100	.4950	.59		0053	6.291	.0082	
				0200	.1800	.76		0154	12.997	.0091	
				0259	.0508	.81		0231	14.635	.0099	
				0459	.0850	.99		0256	18.099	.0105	
				1000	.0399	1.19		0348	24.381	.0122	
				1300	.0467	1.32		0436	37.835	.0145	
				1520	.0043	1.33		0500	39.117	.0159	
								0601	41.757	.0197	
								0646	44.501	.0227	
							0717	44.501	.0248		
							0816	51.056	.0291		
							0901	53.361	.0327		
							0931	53.361	.0352		
							1046	51.818	.0413		
Watershed conditions: 74% forest land; 12% pastured land; 12% cultivated; 2% idle land with dense grass and brush growth.											

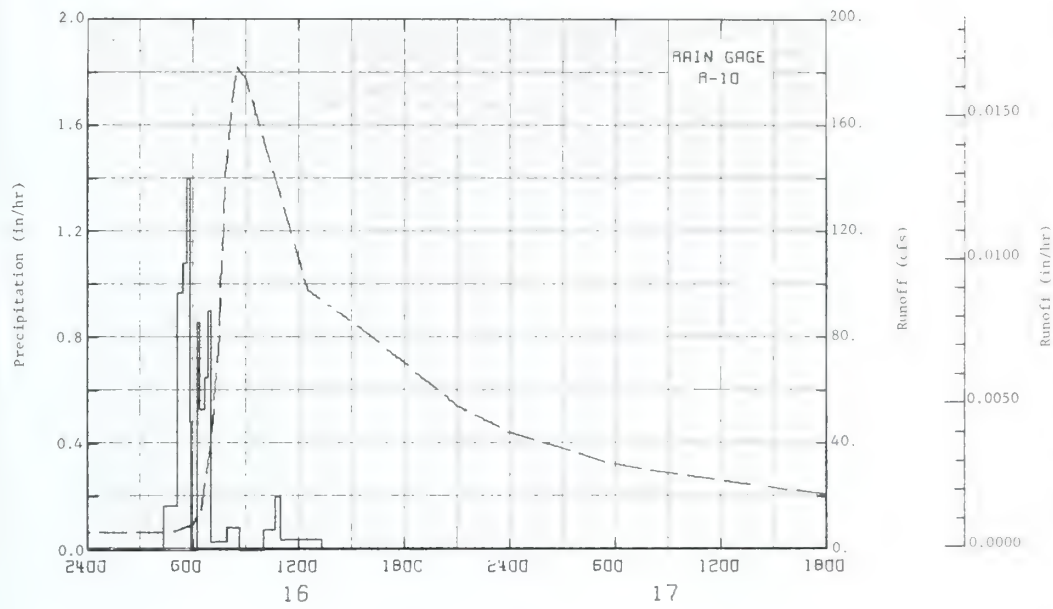
NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR. MULTIPLY BY .000092. FOR 30-DAY ANTECEDENT TEMPERATURE, RAINFALL AND RUNOFF, SEE P. 67.1-2, 67.4-7 AND 67.4-11 RESPECTIVELY. 1/ RUNOFF PRIOR TO 0600 ON 10-18-66.

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR. MULTIPLY BY .000092. FOR 30-DAY ANTECEDENT TEMPERATURE, RAINFALL AND RUNOFF, SEE P. 67.1-2, 67.4-7 AND 67.4-11 RESPECTIVELY. 1/ RUNOFF PRIOR TO 0600 ON 10-18-66.



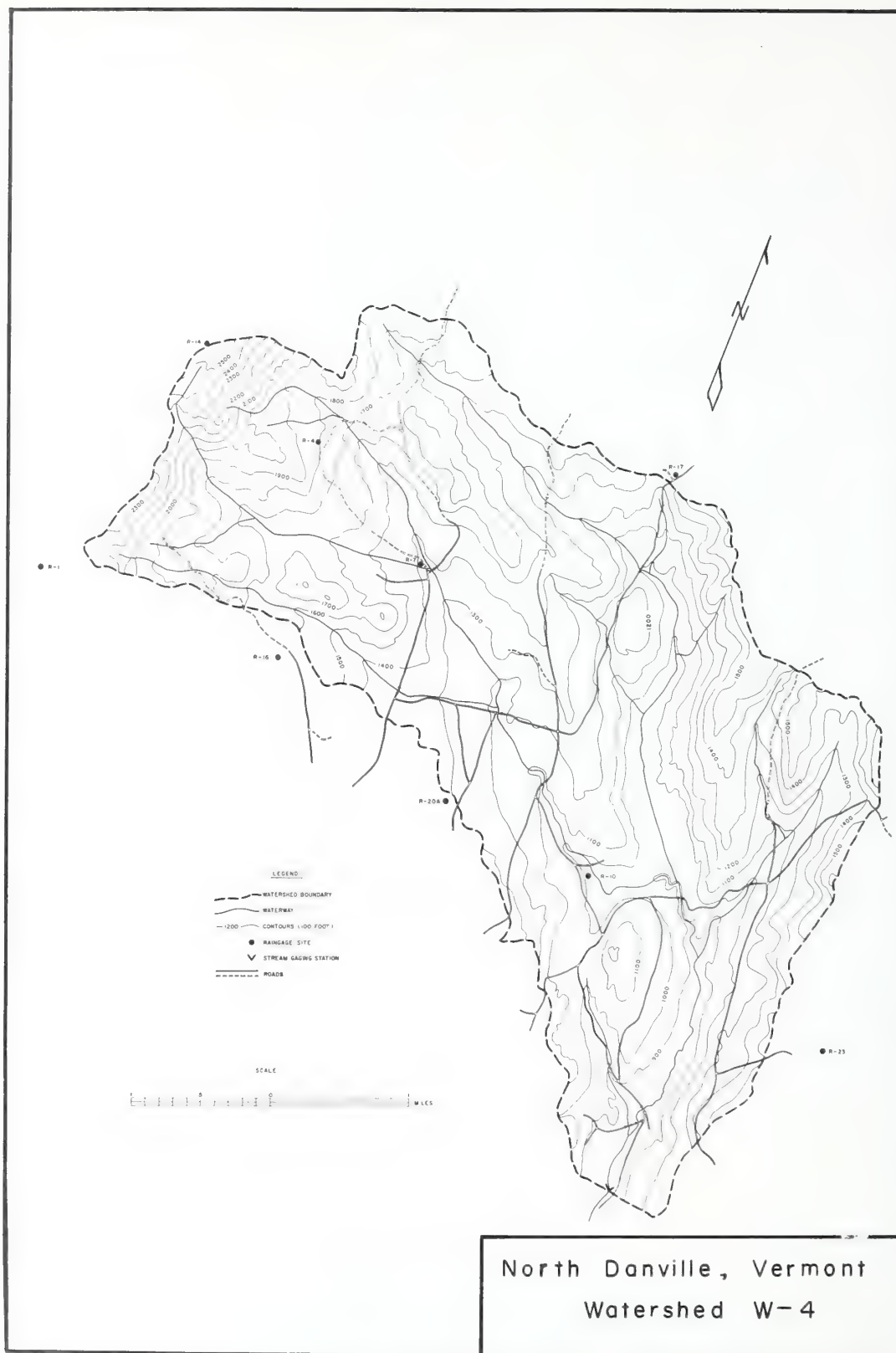
NORTH DANVILLE, VERMONT WATERSHED W-4

1967 SELECTED RUNOFF EVENT			NORTH DANVILLE, VERMONT				WATERSHED W-4				67.04
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)	
Event of July 16-17, 1967											
7-16	.00	1/.003	7-16	RG	R-10		7-16	0445	6.066	.0000	
				0420	.0000	.00		0559	9.804	.0009	
				0506	.1696	.13		0629	14.099	.0015	
				0524	.9657	.42		0706	45.911	.0032	
				0539	1.0800	.60		0729	30.827	.0054	
				0548	1.4000	.90					
				0553	.4800	.04		0749	140.112	.0088	
				0616	.0000	.04		0827	182.030	.0182	
				0623	.8571	1.04		0901	177.225	.0276	
				0640	.5294	1.19		1231	97.714	.0720	
				0652	.6500	1.32		1601	90.827	.1008	
				0700	.9000	1.44		2101	54.143	.1319	
				0757	.0316	1.47		2400	43.805	.1454	
				0840	.0837	1.53	7-17	0500	31.803	.1663	
				1002	.0000	1.53		1200	25.873	.1823	
				1042	.0750	1.58		1800	20.656	.1952	
				1100	.2000	1.64		2400	17.292	.2057	
							1321	.0383	1.73		
Watershed conditions: 74% forest land, 12% pastured land; 12% cultivated; 2% idle land with dense grass and brush growth.											
NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY .000092. FOR 30-DAY ANTECEDENT TEMPERATURE, RAINFALL AND RUNOFF, SEE P. 67.1-2, 67.4-8 AND 67.4-12 RESPECTIVELY. 1/ RUNOFF PRIOR TO 0445 ON 7-16-67.											



July 16-17, 1967

NORTH DANVILLE, VERMONT WATERSHED W-4



MONTHLY PRECIPITATION AND RUNOFF (inches) 1/						NORTH DANVILLE, VERMONT AREA—27,469 ACRES (42.92 SQ. MI.)								67.05
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1965	P 1/	1.46	2.32	.69	2.06	.80	4.97	3.65	6.07	4.05	4.01	4.51	1.86	36.45
	Q	1.15	1.85	2.38	2.73	.92	.91	.41	.64	1.13	2.03	2.52	1.54	18.21
1966	P	1.41	2.09	3.99	1.09	3.64	3.43	2.44	3.66	2.90	2.09	2.56	2.81	32.11
	Q	.94	.74	3.29	4.73	3.50	1.22	.30	.29	.33	.46	.98	1.16	17.94
1967	P	1.25	1.82	.60	3.93	5.45	2.77	4.86	3.04	2.47	4.88	2.29	3.51	36.87
	Q	.56	.38	.73	5.26	4.17	1.28	.91	.50	.40	1.65	1.94	1.57	19.35
STA AV2/P		1.99	2.21	2.25	2.85	2.89	3.12	3.32	3.94	2.60	3.75	3.40	3.53	34.85
	Q	1.49	1.23	2.41	5.72	2.73	.97	.53	.45	.45	1.10	1.42	1.37	19.87
MEAN P 3/		2.57	2.14	2.44	2.82	3.23	3.77	3.47	3.27	3.48	3.06	3.15	2.59	35.99
73 YR														

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS

YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		5 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1965	11-17	0.03	11-17	0.03	11-17	0.06	11-17	0.18	11-17	0.29	11-17	0.41	3-7	0.37	3-3	1.65
1966	3-25	0.04	3-25	0.04	3-25	0.07	3-25	0.20	3-25	0.36	3-25	0.56	3-24	0.79	4-16	1.88
1967	5-3	0.03	5-3	0.03	5-3	0.06	5-3	0.16	5-3	0.28	4-2	0.46	4-2	0.76	4-15	1.58
MAXIMUMS FOR PERIOD OF RECORD																
1960 TO 1967	4-18 1960	0.04	4-18 1960	0.04	4-18 1960	0.08	3-25 1966	0.20	10-7 1962	0.38	10-6 1962	0.70	4-16 1964	1.12	4-12 1960	3.14

Notes: Watershed conditions: Forest predominantly hardwoods, 67%; cultivated land consisting of mostly clover, orchard grass, and timothy hay with very little in row crops, 17%; pasture of mostly bluegrass, 13%; idle land in tall grasses and woody plants, 2%; and homesites and roads, 1%. 1/ Precipitation records from rain gage R-10. 2/ Precipitation records began Sept. 1958, runoff records began Jan. 1, 1960. Part year amounts not included in averages. 3/ Mean P based on 73-yr (1895-1967) U.S. Weather Bureau record period from St. Johnsbury, Vt.

1965 DAILY PRECIPITATION (inches)						NORTH DANVILLE, VERMONT				WATERSHED W-5		67.05	
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	
1	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	1.35	0.73	0.06	0.00	
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.02	0.00	0.00	
3	0.00	0.00	0.00	0.00	0.00	0.05	0.62	0.00	0.00	0.24	0.00	0.09	
4	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.35	
5	0.00	0.05	0.00	0.00	0.00	0.00	0.74	0.00	0.00	0.00	0.00	0.00	
6	0.06	0.00	0.00	0.00	0.00	0.00	0.01	0.05	0.00	0.00	0.00	0.06	
7	0.00	0.55	0.00	0.16	0.00	1.47	0.00	0.64	0.00	0.25	0.00	0.00	
8	0.04	0.14	0.00	0.09	0.00	0.02	0.25	0.46	0.02	0.35	0.72	0.00	
9	0.15	0.03	0.00	0.00	0.08	0.08	0.00	0.25	0.00	0.03	0.13	0.00	
10	0.00	0.57	0.00	0.00	0.10	0.30	0.09	0.76	0.47	0.00	0.00	0.00	
11	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
12	0.00	0.15	0.00	0.55	0.00	0.39	0.00	0.77	0.00	0.32	0.00	0.15	
13	0.10	0.00	0.00	0.20	0.00	1.41	0.00	0.50	0.25	0.00	0.15	0.20	
14	0.05	0.00	0.00	0.00	0.00	0.15	0.08	0.00	0.00	0.00	0.10	0.20	
15	0.00	0.05	0.00	0.15	0.00	0.00	0.02	0.00	0.25	0.59	0.00	0.05	
16	0.02	0.00	0.00	0.23	0.00	0.25	0.00	0.00	0.00	0.00	0.60	0.09	
17	0.05	0.00	0.00	0.02	0.13	0.00	0.00	0.00	0.00	0.00	1.17	0.02	
18	0.00	0.21	0.05	0.00	0.00	0.20	1.46	0.60	0.05	0.00	0.08	0.00	
19	0.00	0.04	0.05	0.00	0.00	0.00	0.00	0.35	0.15	0.00	0.00	0.05	
20	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.05	0.00	
21	0.00	0.00	0.00	0.20	0.00	0.14	0.00	0.00	0.00	0.00	0.15	0.02	
22	0.00	0.00	0.15	0.05	0.04	0.01	0.00	0.00	0.00	0.14	0.00	0.00	
23	0.00	0.00	0.04	0.09	0.00	0.38	0.00	0.10	0.04	0.81	0.00	0.00	
24	0.44	0.00	0.00	0.00	0.00	0.12	0.10	0.00	0.86	0.03	0.00	0.35	
25	0.00	0.45	0.00	0.00	0.00	0.00	0.00	0.00	0.55	0.00	0.10	0.18	
26	0.27	0.00	0.21	0.29	0.00	0.00	0.00	0.95	0.00	0.00	0.26	0.02	
27	0.06	0.00	0.04	0.03	0.05	0.00	0.10	0.00	0.00	0.10	0.82	0.03	
28	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.50	0.00	0.15	0.07	0.00	
29	0.00	0.13	0.00	0.00	0.00	0.00	0.09	0.14	0.00	0.00	0.04	0.00	
30	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	
31	0.00	0.00	0.00	0.35	0.00	0.00	0.00	0.00	0.00	0.19	0.00	0.00	
TOTAL	1.46	2.32	.69	2.06	.80	4.97	3.65	6.07	4.05	4.01	4.51	1.86	
STAAV	2.18	2.28	2.24	2.95	2.42	3.12	3.23	4.10	2.58	3.83	3.67	2.35	

NOTES: DAILY PRECIPITATION VALUES FROM RAIN GAGE R-10. ALL PRECIPITATION IS RAIN EXCEPT FOR THE MONTHS OF DECEMBER, JANUARY, AND FEBRUARY, DURING WHICH ALL PRECIPITATION IS SNOW OR RAIN ON SNOW. STATION AVERAGE IS FOR 8-YR RECORD PERIOD 1960-65.

1966 DAILY PRECIPITATION (inches)						NORTH DANVILLE, VERMONT WATERSHED W-5 67.05						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	0.00	0.00	0.65	0.00	0.13	0.00	0.00	0.00	0.00	0.01	0.00	0.14
2	0.04	0.00	0.26	0.05	0.00	0.00	0.00	0.26	0.00	0.00	0.00	0.07
3	0.21	0.00	0.00	0.05	0.14	0.00	0.00	0.00	0.00	0.00	0.90	0.04
4	0.00	0.00	0.22	0.00	0.09	0.15	0.02	0.00	0.68	0.20	0.00	0.00
5	0.00	0.00	0.83	0.05	0.11	0.10	0.00	0.00	0.00	0.08	0.06	0.00
6	0.05	0.00	0.21	0.00	0.38	0.30	0.15	0.00	0.05	0.02	0.09	0.03
7	0.00	0.00	0.08	0.04	0.00	0.00	0.23	0.00	0.00	0.00	0.00	0.24
8	0.35	0.00	0.05	0.38	0.00	0.22	0.00	0.23	0.00	0.00	0.11	0.37
9	0.00	0.00	0.00	0.08	0.65	0.13	0.00	0.00	0.00	0.00	0.02	0.00
10	0.01	0.00	0.00	0.00	0.04	0.97	0.38	0.00	0.00	0.20	0.02	0.00
11	0.04	0.20	0.00	0.09	0.00	0.00	0.01	0.45	0.00	0.00	0.27	0.30
12	0.00	0.00	0.15	0.01	0.27	0.00	0.31	0.09	0.00	0.10	0.00	0.00
13	0.00	0.83	0.22	0.00	0.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14	0.05	0.07	0.02	0.00	0.00	0.14	0.00	0.00	0.09	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.18	0.00	0.00	0.17	0.00	0.00	0.00
16	0.00	0.05	0.00	0.00	0.00	0.34	0.00	0.56	0.00	0.06	0.20	0.02
17	0.00	0.10	0.00	0.00	0.10	0.04	0.00	0.58	0.00	0.00	0.03	0.00
18	0.00	0.05	0.02	0.00	0.42	0.00	0.05	0.00	0.00	0.00	0.06	0.03
19	0.11	0.00	0.00	0.00	0.83	0.00	0.40	0.00	0.00	0.22	0.00	0.00
20	0.00	0.00	0.10	0.00	0.16	0.02	0.00	0.00	0.00	1.11	0.00	0.00
21	0.03	0.15	0.00	0.10	0.00	0.01	0.05	0.00	0.30	0.00	0.00	0.00
22	0.00	0.10	0.05	0.00	0.00	0.00	0.00	0.46	1.06	0.00	0.00	0.00
23	0.12	0.00	0.01	0.00	0.00	0.00	0.00	0.50	0.24	0.00	0.00	0.00
24	0.05	0.00	0.38	0.15	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.30
25	0.00	0.47	0.54	0.00	0.00	0.25	0.00	0.09	0.10	0.00	0.17	0.30
26	0.00	0.00	0.00	0.00	0.00	0.08	0.49	0.06	0.00	0.00	0.00	0.02
27	0.11	0.00	0.05	0.00	0.00	0.00	0.17	0.06	0.00	0.00	0.00	0.00
28	0.00	0.07	0.00	0.00	0.00	0.00	0.23	0.00	0.00	0.00	0.00	0.03
29	0.00	-----	0.00	0.00	0.00	0.50	0.00	0.00	0.11	0.09	0.08	0.87
30	0.24	-----	0.15	0.09	0.00	0.00	0.00	0.32	0.04	0.00	0.55	0.05
31	0.00	-----	0.00	-----	0.00	-----	0.00	0.00	-----	0.00	-----	0.00
TOTAL	1.41	2.09	3.99	1.09	3.64	3.43	2.44	3.66	2.90	2.09	2.56	2.81
STA AV	2.08	2.26	2.45	2.72	2.57	3.16	3.13	4.05	2.62	3.61	3.53	2.40

NOTES: DAILY PRECIPITATION VALUES FROM RAIN GAGE R-10. ALL PRECIPITATION IS RAIN EXCEPT FOR THE MONTHS OF DECEMBER, JANUARY, AND FEBRUARY, DURING WHICH ALL PRECIPITATION IS SNOW OR RAIN ON SNOW. STATION AVERAGE IS FOR 9-YR RECORD PERIOD 1960-1966.

1967 DAILY PRECIPITATION (inches)						NORTH DANVILLE, VERMONT WATERSHED W-5 67.05						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	0.12	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.00	0.00
2	0.03	0.26	0.00	0.10	0.30	0.00	0.00	0.00	0.04	0.03	0.15	0.00
3	0.00	0.00	0.02	0.10	0.70	0.00	0.35	0.06	0.02	0.00	0.10	0.41
4	0.10	0.09	0.00	0.00	0.10	0.00	0.00	0.25	0.31	0.00	0.30	0.03
5	0.15	0.03	0.22	0.00	0.10	0.00	0.00	0.00	0.04	0.55	0.00	0.00
6	0.00	0.00	0.05	0.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	0.05	0.00	0.20	0.25	0.03	0.21	0.00	0.00	0.00	0.00	0.00	0.00
8	0.00	0.00	0.01	0.00	0.32	0.14	0.00	0.00	0.00	0.01	0.00	0.30
9	0.00	0.00	0.00	0.00	0.24	0.11	0.50	0.26	0.15	0.11	0.00	0.00
10	0.00	0.00	0.00	0.55	0.01	0.00	0.00	0.07	0.75	1.60	0.00	0.00
11	0.03	0.05	0.00	0.00	0.31	0.90	0.00	0.00	0.00	0.07	0.00	0.00
12	0.08	0.00	0.00	0.00	0.07	0.00	0.93	0.00	0.00	0.00	0.11	1.28
13	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.00
14	0.07	0.00	0.00	0.00	0.00	0.11	0.00	0.05	0.00	0.06	0.04	0.00
15	0.06	0.00	0.00	0.54	0.29	0.41	0.00	0.00	0.00	0.03	0.32	0.02
16	0.00	0.38	0.00	0.32	0.03	0.08	1.73	0.00	0.00	0.00	0.00	0.00
17	0.00	0.00	0.00	0.57	0.36	0.27	0.00	0.00	0.00	0.00	0.17	0.00
18	0.00	0.00	0.00	0.35	0.15	0.05	0.06	0.00	0.00	1.24	0.13	0.04
19	0.00	0.00	0.00	0.05	0.78	0.00	0.00	0.24	0.00	0.03	0.07	0.00
20	0.00	0.26	0.00	0.00	0.11	0.03	0.00	0.15	0.00	0.02	0.05	0.00
21	0.00	0.06	0.00	0.00	0.05	0.00	0.04	0.00	0.00	0.04	0.01	0.30
22	0.00	0.00	0.00	0.34	0.20	0.23	0.00	0.16	0.30	0.02	0.05	0.03
23	0.08	0.50	0.00	0.27	0.00	0.00	0.00	0.00	0.00	0.00	0.45	0.02
24	0.00	0.01	0.00	0.05	0.00	0.23	0.40	0.00	0.34	0.00	0.05	0.00
25	0.00	0.02	0.00	0.00	1.22	0.00	0.21	0.00	0.05	0.00	0.03	0.00
26	0.00	0.00	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.94	0.03	0.11
27	0.25	0.01	0.05	0.00	0.00	0.00	0.00	0.85	0.00	0.00	0.01	0.00
28	0.20	0.06	0.05	0.00	0.00	0.00	0.34	0.50	0.03	0.00	0.09	0.35
29	0.01	-----	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.05	0.78
30	0.00	-----	0.00	0.00	0.00	0.00	0.00	0.24	0.34	0.00	0.00	0.00
31	0.00	-----	0.00	-----	0.00	-----	0.30	0.21	-----	0.00	-----	0.14
TOTAL	1.25	1.82	0.60	3.93	5.45	2.77	4.86	3.04	2.47	4.88	2.29	3.51
STA AV	1.99	2.21	2.25	2.85	2.89	3.12	3.32	3.94	2.60	3.75	3.40	2.53

NOTES: DAILY PRECIPITATION VALUES FROM RAIN GAGE R-10. ALL PRECIPITATION IS RAIN EXCEPT FOR THE MONTHS OF DECEMBER, JANUARY, AND FEBRUARY, DURING WHICH ALL PRECIPITATION IS SNOW OR RAIN ON SNOW. STATION AVERAGE IS FOR 10-YR RECORD PERIOD 1960-1967.

1965 MEAN DAILY DISCHARGE (cfs)						NORTH DANVILLE, VERMONT						WATERSHED W-5	67.05
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	
1	49.12	16.00	46.87	23.22	92.07	15.42	7.48	4.43	97.35	87.86	73.80	73.68	
2	40.81	15.79	34.39	21.58	77.87	12.29	6.92	4.78	195.33	118.77	56.69	71.54	
3	76.30	15.51	76.30	21.74	67.17	10.80	11.85	5.54	51.33	65.33	53.41	66.09	
4	84.95	14.68	197.07	22.93	67.24	9.97	19.65	5.26	31.60	93.65	55.81	136.18	
5	66.28	13.85	279.45	28.14	60.20	9.34	17.67	4.99	24.11	58.49	52.07	121.52	
6	65.47	13.57	298.25	42.11	47.03	8.31	60.98	4.43	19.75	45.29	48.47	85.03	
7	47.86	13.85	300.19	49.79	39.52	35.78	16.01	7.37	17.01	42.59	48.47	59.91	
8	52.00	167.94	351.21	48.36	36.56	139.15	17.83	13.70	15.41	127.94	60.81	49.76	
9	77.10	226.29	219.03	62.46	38.20	28.32	14.80	17.80	16.00	107.81	221.06	49.63	
10	82.56	212.44	140.36	110.00	49.84	24.06	13.01	45.78	32.82	66.02	82.49	61.48	
11	44.51	172.00	103.32	123.55	51.43	21.42	12.45	18.68	25.84	53.46	63.23	53.11	
12	36.72	132.20	75.56	150.69	33.61	14.96	9.42	13.01	16.88	80.92	61.49	54.01	
13	34.50	100.85	68.16	162.30	26.59	237.31	8.31	131.03	16.16	70.27	72.38	54.01	
14	33.80	66.32	63.00	133.85	24.30	122.31	7.56	25.32	25.33	52.90	82.91	57.61	
15	24.78	49.44	53.58	146.66	23.13	70.68	8.27	13.85	23.85	69.80	59.68	59.83	
16	32.97	34.76	37.63	271.55	21.33	62.76	7.20	11.08	37.40	169.71	104.50	59.83	
17	58.30	30.18	42.09	150.20	34.35	28.29	6.37	9.42	23.47	72.61	453.99	55.82	
18	48.55	31.16	41.17	108.44	45.05	29.37	83.90	45.53	19.67	57.06	173.13	52.63	
19	36.56	34.21	34.48	104.00	27.84	21.41	47.84	39.75	25.03	52.63	109.72	44.25	
20	36.56	43.42	23.92	120.54	23.82	17.22	15.93	29.42	32.38	49.30	94.17	30.63	
21	36.56	47.92	24.19	149.52	19.94	14.96	12.46	14.18	25.53	46.53	89.19	43.22	
22	36.56	42.34	28.25	237.82	18.28	14.03	10.25	12.03	20.22	45.98	91.19	45.57	
23	36.56	31.71	24.70	137.36	18.42	12.64	9.35	10.87	17.17	147.39	92.23	40.99	
24	32.13	25.68	23.90	101.77	16.62	23.00	8.59	10.39	26.30	132.75	82.82	43.49	
25	27.42	34.18	23.94	90.91	15.37	16.11	8.54	9.69	273.71	75.95	76.45	47.56	
26	25.20	212.94	22.55	97.81	14.68	12.12	7.18	10.35	69.56	61.49	74.51	55.05	
27	22.71	259.08	22.45	124.17	13.99	10.53	6.02	69.14	40.10	59.27	110.16	45.15	
28	22.44	80.16	25.94	102.15	13.99	9.42	5.82	66.17	30.50	61.73	104.63	41.00	
29	21.05	-----	22.39	102.99	12.74	8.31	5.82	39.99	27.97	55.67	85.59	38.50	
30	19.04	-----	23.99	98.86	12.46	8.03	5.26	27.80	27.97	51.14	74.61	38.50	
31	17.73	-----	22.83	-----	12.42	-----	4.71	19.22	-----	65.39	-----	40.95	
MEAN	42.81	76.37	88.75	104.85	34.07	34.94	15.40	23.90	43.53	75.67	96.99	57.31	
INCHES	1.150	1.853	2.384	2.726	.915	.908	.414	.642	1.131	2.033	2.521	5.39	

NOTES: TO CONVERT MEAN DAILY DISCHARGE, IN CFS, TO IN/DAY, MULTIPLY BY .0008665.

1966 MEAN DAILY DISCHARGE (cfs)						NORTH DANVILLE, VERMONT						WATERSHED W-5	67.05
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	
1	76.15	23.27	46.56	101.47	184.92	42.65	17.67	4.95	5.19	10.14	12.19	57.10	
2	81.35	21.88	110.59	98.33	141.82	42.11	13.88	4.96	4.64	9.21	13.02	40.99	
3	57.71	20.50	88.47	97.37	115.00	37.32	11.61	7.73	4.99	8.24	78.50	25.64	
4	46.81	19.67	57.61	96.86	144.25	38.59	10.01	6.29	17.00	7.12	69.69	31.67	
5	43.08	19.67	148.75	99.12	119.50	48.27	8.82	5.05	21.49	11.53	40.60	23.81	
6	44.04	19.67	298.50	110.77	168.10	74.20	9.50	4.09	10.02	13.70	36.98	26.81	
7	40.99	20.50	154.46	125.61	163.82	43.10	13.66	3.60	7.20	12.43	36.77	28.87	
8	37.39	20.50	82.79	153.43	113.38	40.88	12.59	3.85	6.65	10.73	36.45	65.61	
9	36.28	19.67	63.88	151.75	155.20	49.77	9.75	3.53	5.82	8.78	38.74	98.40	
10	35.73	19.67	63.20	154.45	168.31	211.02	9.34	2.61	5.55	8.36	34.21	128.18	
11	34.07	34.08	58.17	156.38	127.25	114.09	20.53	5.03	10.73	12.00	69.87	199.73	
12	32.13	84.56	47.51	159.25	117.29	59.84	16.28	7.56	4.29	11.29	49.14	76.21	
13	28.39	61.71	47.99	154.68	228.46	44.64	19.23	6.99	3.81	11.63	36.45	37.78	
14	28.53	68.66	48.75	217.15	141.02	36.72	12.51	5.89	4.07	10.73	30.01	48.70	
15	29.64	50.99	46.39	249.47	110.69	45.20	9.19	5.54	5.89	9.83	28.01	40.95	
16	29.08	38.50	43.04	233.95	98.33	83.61	7.86	9.15	6.92	9.97	21.18	25.19	
17	27.14	38.29	42.97	253.64	103.64	85.77	6.99	67.65	10.79	10.53	30.78	41.41	
18	26.87	32.93	53.06	254.82	89.95	45.29	5.78	18.44	4.71	10.39	46.92	42.90	
19	27.70	28.63	81.92	253.39	417.47	33.84	16.13	11.49	4.70	10.27	46.69	26.89	
20	27.97	23.61	97.63	218.79	245.25	29.41	24.72	7.41	4.36	113.21	24.71	19.76	
21	27.97	21.33	116.75	276.33	159.61	23.73	10.06	5.82	3.97	54.95	21.56	23.50	
22	27.97	20.77	130.86	379.33	118.19	20.39	7.36	7.85	59.77	31.02	21.33	25.07	
23	29.08	21.05	168.99	268.25	100.62	17.70	6.30	27.42	65.83	24.34	20.24	20.53	
24	29.08	34.15	249.44	254.92	87.05	15.71	5.44	31.97	29.22	18.00	23.32	15.72	
25	27.97	20.77	642.50	240.91	77.20	20.15	4.70	16.34	17.59	15.72	29.43	17.14	
26	29.08	21.05	226.71	187.13	70.17	22.27	11.09	12.60	12.95	14.06	50.64	21.25	
27	25.48	21.05	148.44	137.50	63.65	17.56	11.18	10.46	10.32	13.29	43.90	24.97	
28	23.54	21.88	114.44	124.21	58.44	12.84	7.34	9.28	9.49	13.23	39.54	24.51	
29	23.54	-----	100.54	121.59	56.12	17.81	13.13	6.30	9.69	12.67	43.20	24.24	
30	23.54	109.77	122.97	48.54	33.03	9.13	5.12	10.80	-----	12.72	58.11	26.73	
31	23.54	-----	107.96	-----	44.04	-----	5.89	9.64	-----	11.37	-----	29.15	
MEAN	34.90	30.32	122.54	181.79	130.23	46.92	11.22	10.79	12.62	17.14	37.74	43.21	
INCHES	.937	.736	3.292	4.726	3.498	1.220	.301	.290	.328	.461	.981	1.161	

NOTES: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .0008665.

1967 MEAN DAILY DISCHARGE (cfs)						NORTH DANVILLE, VERMONT WATERSHED W-5 67.05						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	24.89	19.67	13.57	184.45	123.61	72.36	17.71	30.91	24.79	23.53	36.66	27.11
2	21.88	19.67	13.57	361.57	133.35	64.57	16.04	18.60	15.72	24.55	35.21	28.58
3	20.50	18.70	13.57	512.45	440.06	57.86	24.57	15.58	14.13	18.21	76.06	36.70
4	20.63	18.28	13.57	207.42	199.30	52.93	29.13	33.40	13.28	14.37	67.66	43.27
5	21.05	18.28	13.57	147.14	182.04	46.08	18.27	39.30	17.46	17.74	79.55	34.67
6	20.36	17.52	13.57	149.12	137.37	41.96	16.11	19.04	13.71	30.70	50.24	29.01
7	27.86	16.58	13.57	120.29	112.72	38.26	14.03	15.57	10.99	21.25	42.35	28.63
8	30.12	15.51	13.57	119.19	151.15	46.43	12.80	13.94	9.22	16.23	39.24	30.53
9	21.05	15.23	13.57	134.13	160.29	52.19	13.50	13.42	8.27	16.01	34.75	31.92
10	19.67	14.82	14.20	363.42	167.49	43.81	33.91	25.29	54.38	71.24	35.18	28.76
11	19.67	14.68	18.56	249.47	132.52	39.00	17.45	22.72	26.31	287.79	30.96	26.90
12	19.11	14.40	24.51	126.13	188.52	50.83	77.65	16.57	16.06	63.29	36.12	222.86
13	19.32	13.62	26.61	109.91	114.37	37.05	44.51	13.78	13.09	40.37	54.40	279.13
14	18.83	12.33	21.26	136.40	94.31	29.90	21.64	12.69	11.47	32.28	43.29	115.95
15	19.60	12.88	19.63	256.25	109.75	107.72	16.33	10.78	10.39	30.85	33.71	74.53
16	18.74	16.50	19.25	267.85	130.02	103.82	180.07	9.00	9.07	27.01	34.08	50.27
17	18.34	22.47	18.23	164.48	91.93	67.77	72.84	7.93	8.37	26.52	35.75	52.16
18	17.45	17.17	16.65	259.15	153.65	95.68	35.82	7.32	7.91	77.14	42.05	53.77
19	16.41	15.03	15.56	201.08	226.44	50.96	29.54	7.40	7.78	275.88	40.92	77.24
20	16.00	13.33	15.38	185.89	250.41	38.07	24.62	13.03	6.82	71.55	38.20	84.96
21	15.72	13.83	14.26	167.67	129.60	34.77	19.47	12.51	6.79	53.88	32.75	62.09
22	16.34	13.64	14.09	258.94	100.27	50.79	39.69	10.47	10.53	51.44	33.88	71.53
23	17.24	13.57	14.17	301.51	124.22	55.66	23.06	11.59	13.91	42.44	59.91	63.55
24	22.64	13.57	14.81	213.85	92.59	38.58	35.36	8.77	11.29	37.22	104.33	32.83
25	27.07	14.82	15.85	163.91	181.80	33.24	36.02	7.03	27.32	35.29	56.27	29.97
26	24.86	15.79	19.37	146.12	330.57	38.64	39.34	6.23	18.74	224.29	46.30	39.93
27	23.54	14.73	34.01	148.79	171.01	26.21	21.45	12.86	13.13	85.34	69.49	24.81
28	23.59	13.57	61.78	143.35	121.62	21.67	34.31	84.74	11.34	58.93	43.64	30.56
29	22.23	-----	92.58	137.53	98.65	19.04	39.26	26.24	11.41	47.92	35.87	31.91
30	19.11	-----	109.61	126.82	85.95	17.21	23.09	15.58	34.43	42.97	28.87	36.05
31	19.53	-----	116.48	-----	77.83	-----	20.93	30.05	-----	39.01	-----	34.16
MEAN	20.75	15.72	27.06	202.14	155.27	49.10	33.82	18.46	15.27	61.46	45.92	58.53
INCHES	.557	.381	.727	5.255	4.171	1.276	.909	.496	.397	1.651	1.194	1.572

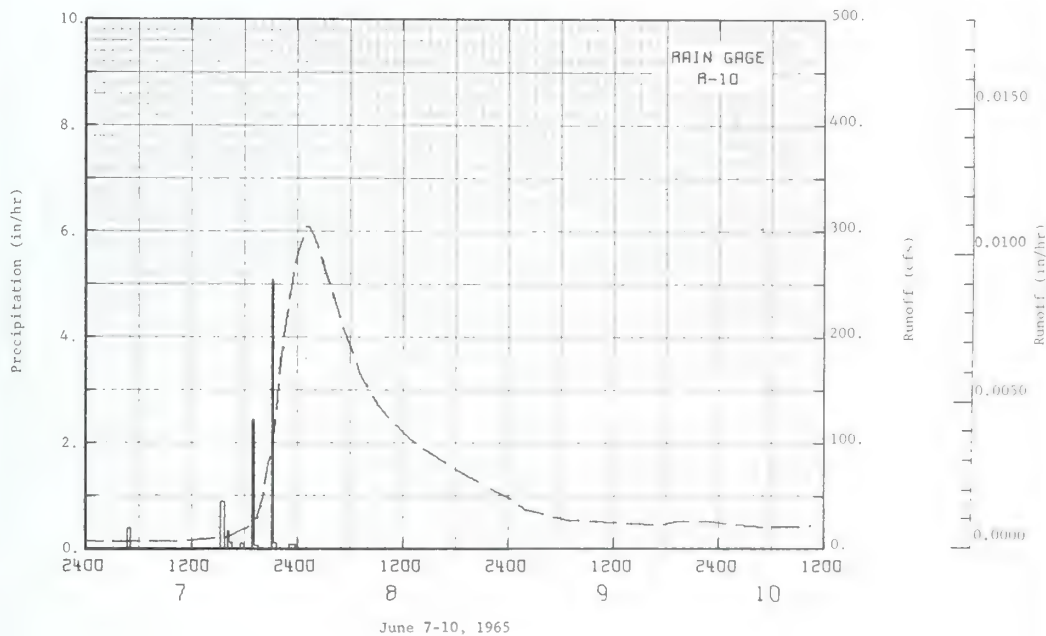
NOTES: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .0008665.

1965 SELECTED RUNOFF EVENT						NORTH DANVILLE, VERMONT WATERSHED W-5 67.05						
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF					
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)		
Event of June 7-10, 1965												
6- 7	.00	.001	6- 7	RG	R-10	.00	6- 7	0301	7.200	.0000		
				0445	.0000			0901	7.760	.0016		
				0510	.4000			.17	0943	9.032	.0018	
				1520	.0000			.17	1550	11.610	.0040	
				1550	.9000			.62	1616	13.295	.0042	
				1610	.0000			.62				
				1620	.3600			.68	1711	16.896	.0047	
				1640	.1200			.72	1758	19.642	.0052	
				1740	.0000			.72	1844	22.712	.0058	
				1800	.1200			.76	1924	27.421	.0064	
				1900	.0000			.76	2000	45.978	.0072	
				1910	2.4600			1.17	2017	54.011	.0077	
				1940	.0900			1.21	2047	81.685	.0099	
				2118	.0000			1.21	2112	95.003	.0102	
				2120	5.1000			1.38	2130	114.945	.0113	
				2140	.1200			1.42	2156	157.877	.0134	
				2310	.0000			1.42	2213	177.542	.0151	
				2350	.0750			1.47	2228	194.100	.0168	
									2257	221.659	.0204	
									2330	252.603	.0251	
									2347	269.221	.0278	
									2400	275.849	.0299	
									6- 8	0024	294.394	.0340
										0102	304.120	.0407
										0126	304.170	.0451
										0221	294.304	.0542

NOTES: TO CONVERT CFS TO IN/HR, MULTIPLY BY 0.000036104. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USDA MISC. PUB. 994, P. 67.5-5. FOR 30-DAY ANTECEDENT TEMPERATURE RAINFALL AND RUNOFF, SEE P. 67.1-1, 67.5-1 AND 67.5-3, RESPECTIVELY. 1/ RUNOFF PRIOR TO 0301 ON 6-7-65.

1965 SELECTED RUNOFF EVENT			NORTH DANVILLE, VERMONT				WATERSHED W-5				67.05
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)	
Event of June 7-10, 1965 - Continued											
							6-8	0336	252.603	.0671	
								0445	221.859	.0770	
								0558	193.330	.0881	
								0701	170.064	.0930	
								0747	155.661	.0975	
								0929	133.226	.1063	
								1030	122.701	.1111	
								1249	103.866	.1206	
								1416	95.003	.1258	
								1720	78.661	.1354	
								1903	70.075	.1400	
								2043	52.320	.1440	
								2400	48.471	.1506	
							6-9	0203	36.561	.1538	
								0645	27.421	.1592	
								1416	24.097	.1662	
								1717	22.712	.1689	
								1815	25.759	.1696	
								1918	27.421	.1706	
								2215	26.590	.1735	
							6-10	2400	24.928	.1751	
								0133	23.543	.1765	
								0501	21.327	.1793	
								1032	22.712	.1837	

NOTES: TO CONVERT CFS TO IN/HR, MULTIPLY BY 0.000036104.



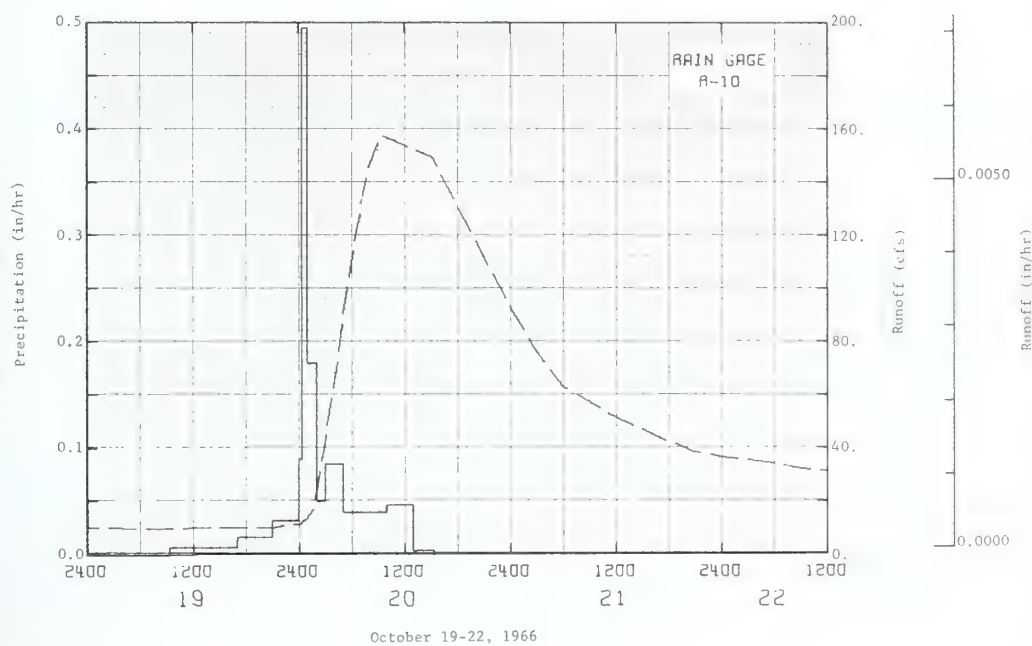
NORTH DANVILLE, VERMONT WATERSHED W-5

1966 SELECTED RUNOFF EVENT			NORTH DANVILLE, VERMONT				WATERSHED W-5				A7.05
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)	
Event of October 19-22, 1966											
10-19	.00	.002	10-19	RG	R-10		10-19	0600	0.694	.0000	
				0921	.0000	.00		1200	10.249	.0022	
				1659	.0066	.05		1759	10.249	.0044	
				2059	.0175	.12		1920	10.525	.0049	
				2400	.0331	.22		2059	10.525	.0055	
				0020	.0900	.25					
				0100	.4950	.58		2300	11.633	.0063	
				0200	.1200	.76		2400	11.633	.0067	
				0259	.0509	.81		0010	11.633	.0069	
				0459	.0850	.98		0015	11.610	.0069	
			10-20	1000	.0399	1.18	0100	14.126	.0071		
				1300	.0467	1.32	0146	17.727	.0075		
				1520	.0043	1.33	0331	54.011	.0098		
							0355	42.874	.0106		
							0431	74.507	.0121		
							0515	95.280	.0143		
							0600	109.960	.0171		
							0745	144.028	.0251		
							0900	154.830	.0318		
							0915	157.600	.0332		
							1300	152.060	.0542		
							1511	149.291	.0661		
							1757	131.287	.0801		
							2400	93.064	.1046		
				10-21			0300	76.169	.1138		
							0600	42.874	.1213		
10-22						1200	51.241	.1337			
						1800	42.100	.1438			
						2044	38.500	.1478			
						2400	36.284	.1522			
						0301	35.176	.1561			
						0601	34.068	.1598			
					0900	32.129	.1634				
					1200	31.021	.1668				

Watershed conditions: 67% forest; 17% hay; 13% pastured land; 2% idle land with dense brush and grass growth; 1% homesites and roads.

NOTES: TO CONVERT CFS TO IN/HR, MULTIPLY BY 0.000036104. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES 1960-61, USDA MISC. PUB. 994, P. 67.5-5. FOR 30-DAY ANTECEDENT TEMPERATURE, RAINFALL AND RUNOFF, SEE P. 67.1-2, 67.5-2 AND 67.5-3, RESPECTIVELY. 1/ RUNOFF PRIOR TO 0600 ON 10-19-66.

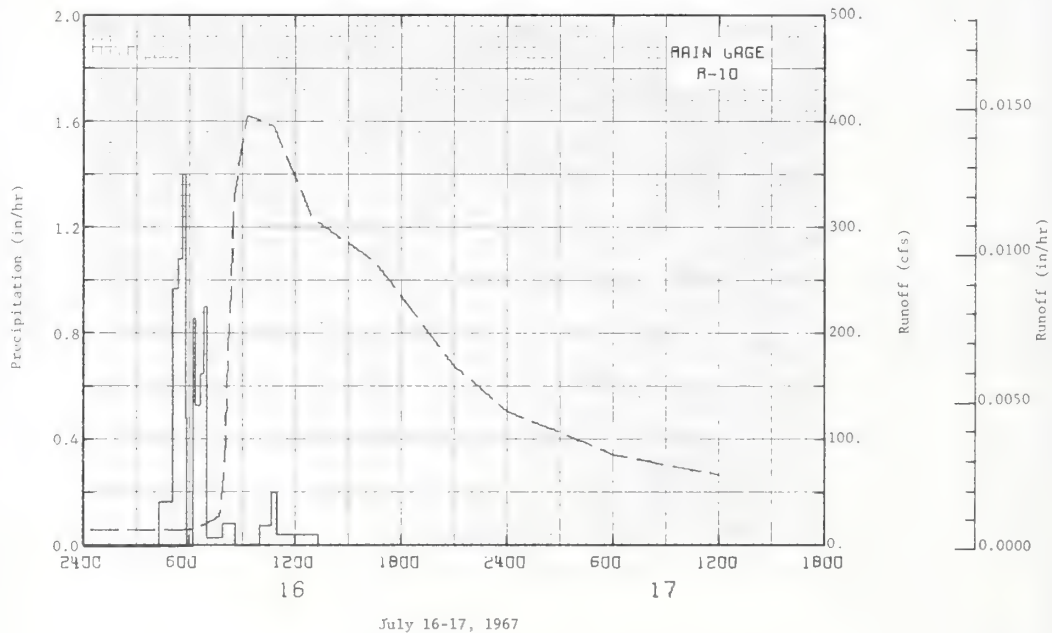
NOTES: TO CONVERT CFS TO IN/HR, MULTIPLY BY 0.000036104. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES 1960-61, USDA MISC. PUB. 994, P. 67.5-5. FOR 30-DAY ANTECEDENT TEMPERATURE, RAINFALL AND RUNOFF, SEE P. 67.1-2, 67.5-2 AND 67.5-3, RESPECTIVELY. 1/ RUNOFF PRIOR TO 0600 ON 10-19-66.



NORTH DANVILLE, VERMONT WATERSHED W-5

1967 SELECTED RUNOFF EVENT						NORTH DANVILLE, VERMONT		WATERSHED W-5		67.05	
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)	
Event of July 16-17, 1967											
7-16	.00	.003	7-16	RG	R-10		7-16	0513	14.690	.0000	
				0420	.0000	.00		0629	15.342	.0007	
				0506	.1626	.13		0745	23.083	.0017	
				0524	.9447	.42		0801	74.507	.0022	
				0539	1.0900	.69		0810	152.060	.0029	
				0548	1.4000	.99					
				0553	.4800	.94		0834	329.325	.0063	
				0616	.0000	.94		0918	404.663	.0160	
				0623	.9571	1.04		1048	394.692	.0376	
				0640	.5294	1.10		1300	307.444	.0655	
				0652	.6500	1.32		1630	267.006	.1018	
				0700	.9000	1.44		2059	163.956	.1371	
				0757	.0316	1.47		2400	128.301	.1532	
				0840	.0837	1.53	7-17	0600	88.309	.1761	
1002	.0000	1.53	1200	68.197	.1925						
1042	.0750	1.58	2400	43.208	.2163						
							7-18	0401	39.500	.2222	
								0716	37.392	.2266	
								1349	34.068	.2350	
								1815	32.960	.2404	
							2400	32.960	.2472		

NOTES: TO CONVERT CFS TO IN/HR, MULTIPLY BY 0.000036104. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES 1960-61, USDA MISC. PUB. 994, P. 67.5-5. FOR 30-DAY ANTECEDENT TEMPERATURE, RAINFALL AND RUNOFF, SEE P. 67.1-2, 67.5-2 AND 67.5-4, RESPECTIVELY. 1/ RUNOFF PRIOR TO 0513 ON 7-16-67.



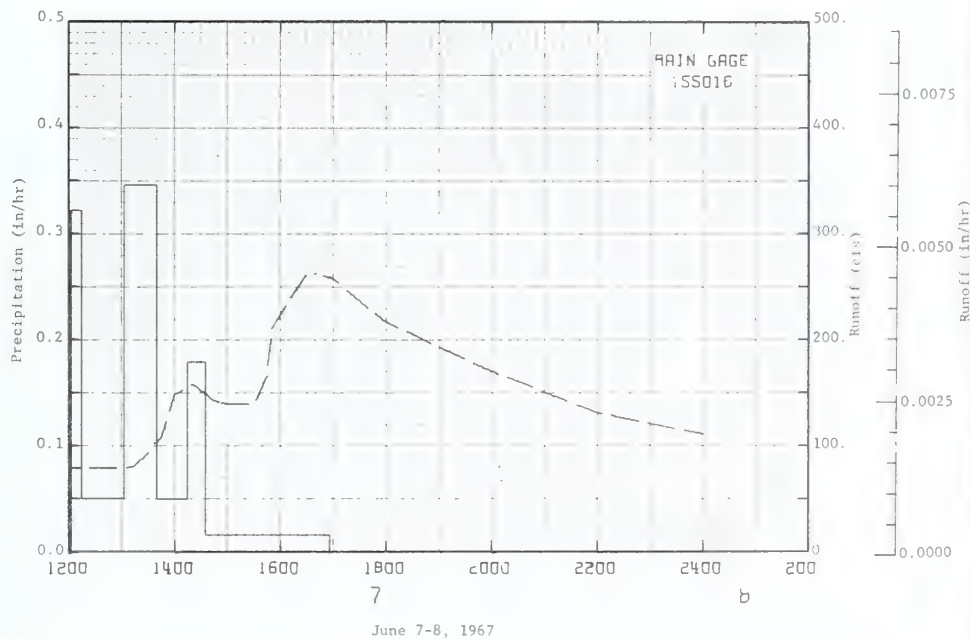
NORTH DANVILLE, VERMONT WATERSHED W-5

MONTHLY PRECIPITATION AND RUNOFF (inches)						REYNOLDS, IDAHO WATERSHED W-1 (68 036068) AREA—57,700 ACRES (90.2 SQ. MILES)																		
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL										
1967	P1/	3.32	.90	.63	1.85	1.67	2.21	.22	.00	.62	1.43	1.60	1.02	15.47										
		.204	.167	.162	.131	.674	.725	.029	.009	.011	.015	.020	.034	2.179										
STA AVG P (63-67)	P	2.52	.96	.75	1.49	1.50	1.92	.16	.64	.44	.77	2.35	1.88	15.38										
		.438	.305	.224	.491	.571	.361	.036	.027	.013	.019	.042	.318	2.845										
MEAN 28 YR.	P2/	1.32	1.33	1.32	1.16	1.29	.89	.21	.16	.19	.84	1.20	1.32	11.43										
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																								
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL																					
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS									
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME								
1967	6-7	.005	6-7	.004	6-7	.008	1-21	.022	6-6	.034	6-6	.054	6-6	.105	6-6	.329								
MAXIMUMS FOR PERIOD OF RECORD																								
1963 TO 1967	12-23 1964	.065	12-23 1964	.064	12-23 1964	.125	12-23 1964	.270	12-23 1964	.327	12-23 1964	.453	12-23 1964	.721	01-28 1965	1.313								
NOTES: Watershed Conditions: Predominately sagebrush rangeland, 95%; small stands of forest, 2%; permanent fields of flow irrigated alfalfa, 3%. 1/ Precipitation values are Thiessen weighted from 20 gages. 2/ Mean P based on 28-yr (1939-66) U.S. Weather Bureau record period at Boise, Idaho; 50 miles N.E. of watershed.																								
1967 DAILY AIR TEMPERATURE (degrees F)						REYNOLDS, IDAHO WATERSHED W-1 (68 036068)										68.01								
DAY	JAN		FEB		MAR		APR		MAY		JUNE		JULY		AUG		SEPT		OCT		NOV		DEC	
1	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	42	28	43	29	53	37	45	19	51	30	61	39	79	47	88	56	97	61	67	39	59	35	37	18
2	36	25	44	32	38	24	51	21	57	33	65	35	85	50	89	55	95	61	57	37	47	24	37	19
3	43	25	48	37	37	19	58	22	60	39	68	39	95	56	95	53	88	52	59	34	47	22	46	25
4	46	35	51	33	39	17	56	35	59	34	68	47	91	62	92	57	86	59	63	34	44	23	48	37
5	40	23	42	31	48	23	49	32	61	32	58	45	91	59	88	60	79	67	55	37	49	26	45	25
6	31	21	47	23	56	34	51	28	68	35	61	47	89	57	88	50	80	58	59	34	61	21	31	19
7	32	23	42	24	47	21	50	28	73	47	61	44	87	57	78	51	86	51	65	31	70	31	33	23
8	35	20	44	20	54	34	53	34	79	38	64	43	89	59	83	47	80	57	71	34	69	47	32	12
9	41	18	46	41	51	30	55	32	65	43	63	42	84	53	91	47	82	47	72	40	47	35	31	12
10	34	21	44	35	50	36	54	35	54	31	67	45	89	55	92	50	81	53	74	39	59	42	40	18
11	45	26	51	25	46	28	48	34	49	26	63	45	95	56	93	57	61	41	75	43	60	42	43	23
12	43	31	55	27	36	17	54	35	47	27	63	41	99	57	95	56	58	39	59	35	61	42	23	9
13	47	42	53	29	42	27	58	34	55	34	66	42	96	74	97	56	64	36	70	31	58	42	21	3
14	50	29	29	18	42	25	43	30	66	32	70	49	91	62	94	54	70	36	54	34	60	42	21	-1
15	51	36	31	21	54	22	43	27	72	40	77	49	93	57	95	56	76	39	58	25	57	34	23	-1
16	38	24	37	27	53	42	46	29	79	41	82	53	88	65	97	59	79	41	69	29	54	28	29	3
17	39	20	45	36	56	36	49	36	85	45	84	52	85	61	99	68	83	43	73	33	50	20	26	20
18	39	17	43	25	50	31	46	33	76	45	89	51	88	55	97	68	76	47	58	32	42	24	33	20
19	48	38	35	23	46	33	39	29	76	47	89	56	82	53	97	66	80	49	67	28	41	31	31	8
20	46	37	40	17	54	30	47	31	81	41	87	59	83	50	98	60	82	52	67	48	46	30	29	14
21	43	32	43	23	55	31	46	21	87	46	73	54	85	52	87	59	90	49	63	39	47	29	28	11
22	36	20	53	21	61	30	46	24	90	52	75	47	93	56	90	51	78	55	55	32	46	27	35	25
23	35	14	53	25	55	34	45	33	80	53	91	57	94	61	95	54	77	44	56	24	49	28	36	22
24	29	18	53	29	46	24	52	29	71	45	91	55	95	58	89	57	82	46	59	34	52	25	44	21
25	37	28	43	35	50	19	49	32	64	36	97	55	92	57	88	57	80	48	50	25	36	29	46	42
26	43	28	46	29	48	25	45	33	73	34	91	56	89	57	90	59	79	47	57	28	35	17	49	38
27	50	40	55	24	56	22	50	37	80	41	74	55	87	54	89	63	83	44	59	35	37	15	52	39
28	53	45	60	31	53	36	41	27	70	55	81	49	98	52	90	53	86	44	48	27	35	17	44	29
29	50	40	---	---	38	27	43	26	63	45	89	52	90	64	92	53	86	53	61	29	38	23	40	26
30	41	28	---	---	42	26	41	32	57	41	71	50	92	60	93	53	65	45	60	30	36	18	37	29
31	39	31	---	---	41	26	---	---	55	36	---	---	90	61	94	58	---	---	60	31	---	---	40	28
AV.	42	28	46	28	48	28	48	30	68	39	75	48	90	57	92	56	80	49	62	33	50	29	36	20
MEAN	34.8	36.6	38.1	39.2	53.7	61.5	73.6	74.0	64.2	47.6	30.4	27.8												
STA AV	36.18	44.26	47.25	54.30	66.39	73.46	86.50	84.49	77.43	65.33	50.27	40.20												
NOTES: TEMPERATURE DATA READINGS TAKEN FROM HYGROTHERMOGRAPH RECORD. STA AV BASED ON 1963-67 RECORD PERIOD. FOR MAP OF WATERSHED SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1963, P.68.1-8.																								

1967 DAILY PRECIPITATION (inches)						REYNOLDS, IDAHO WATERSHED W-1 (68 036068)						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	0.0	0.0	0.0	0.0	0.01	0.48	0.0	0.0	0.0	0.03	0.0	0.0
2	0.0	0.0	0.0	0.0	0.0	0.02	0.02	0.0	0.0	0.41	0.0	0.0
3	0.05	0.0	0.0	0.0	0.03	0.0	0.0	0.0	0.0	0.0	0.0	0.01
4	0.05	0.0	0.0	0.01	0.05	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	0.05	0.0	0.0	0.10	0.0	0.28	0.0	0.0	0.0	0.17	0.0	0.33
6	0.08	0.0	0.0	0.07	0.0	0.47	0.0	0.0	0.0	0.01	0.0	0.0
7	0.0	0.0	0.0	0.02	0.0	0.16	0.01	0.0	0.0	0.0	0.0	0.0
8	0.0	0.0	0.0	0.0	0.01	0.21	0.0	0.0	0.06	0.0	0.02	0.16
9	0.0	0.0	0.03	0.0	0.13	0.01	0.0	0.0	0.0	0.0	0.10	0.0
10	0.0	0.0	0.03	0.01	0.12	0.04	0.0	0.0	0.0	0.0	0.09	0.0
11	0.0	0.0	0.10	0.20	0.04	0.0	0.0	0.0	0.45	0.23	0.0	0.01
12	0.09	0.0	0.06	0.01	0.07	0.07	0.0	0.0	0.02	0.01	0.0	0.04
13	0.09	0.29	0.02	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14	0.0	0.19	0.0	0.04	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15	0.0	0.09	0.0	0.08	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16	0.0	0.18	0.03	0.0	0.0	0.0	0.13	0.0	0.0	0.0	0.0	0.02
17	0.0	0.08	0.0	0.07	0.0	0.0	0.06	0.0	0.0	0.0	0.0	0.04
18	0.0	0.02	0.08	0.01	0.0	0.0	0.0	0.0	0.0	0.0	0.80	0.22
19	0.0	0.0	0.01	0.10	0.0	0.04	0.0	0.0	0.0	0.0	0.18	0.0
20	0.34	0.0	0.02	0.10	0.0	0.05	0.0	0.0	0.0	0.0	0.0	0.02
21	1.41	0.0	0.0	0.03	0.0	0.21	0.0	0.0	0.0	0.10	0.0	0.02
22	0.06	0.0	0.0	0.09	0.0	0.13	0.0	0.0	0.0	0.0	0.0	0.0
23	0.0	0.0	0.01	0.47	0.0	0.0	0.0	0.0	0.0	0.0	0.01	0.03
24	0.09	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.02	0.0
25	0.0	0.05	0.0	0.09	0.0	0.0	0.0	0.0	0.0	0.01	0.0	0.05
26	0.18	0.0	0.0	0.05	0.0	0.0	0.0	0.0	0.0	0.03	0.0	0.01
27	0.07	0.0	0.0	0.04	0.0	0.04	0.0	0.0	0.0	0.03	0.0	0.02
28	0.03	0.0	0.08	0.19	0.04	0.0	0.0	0.0	0.0	0.40	0.06	0.0
29	0.10	---	0.06	0.01	0.17	0.0	0.0	0.0	0.06	0.0	0.23	0.0
30	0.08	---	0.02	0.06	0.20	0.0	0.0	0.0	0.03	0.0	0.0	0.0
31	0.55	---	0.08	---	0.80	---	0.0	---	---	0.0	---	0.04
TOTAL	3.32	0.90	0.63	1.85	1.67	2.21	0.22	0.0	0.62	1.43	1.60	1.02
STA AV	2.52	0.96	0.75	1.49	1.50	1.92	0.16	0.64	0.44	0.77	2.35	1.88
NOTES: PRECIPITATION AMOUNTS ARE THIESSEN WEIGHTED VALUES FROM 20 GAGES. STA AV BASED ON RECORD PERIOD 1963-67. TOTAL PRECIPITATION FOR YEAR = 15.47 INCHES.												
1967 MEAN DAILY DISCHARGE (cfs)						REYNOLDS, IDAHO WATERSHED W-1 (68 036068)						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	2.86	22.83	15.32	9.67	15.31	91.68	7.52	0.64	0.78	1.01	1.81	1.09
2	2.75	19.27	14.22	9.49	14.32	81.82	7.12	0.61	0.88	1.17	1.80	1.19
3	3.16	21.24	11.52	9.37	13.64	73.32	5.30	0.61	0.91	1.26	1.84	1.31
4	3.82	21.99	9.65	7.17	13.44	61.03	3.55	0.69	0.93	1.10	1.87	1.26
5	2.53	19.64	10.78	7.65	14.20	65.64	3.37	0.68	0.91	1.13	1.83	1.72
6	1.68	14.95	10.88	7.61	21.57	132.46	2.92	0.70	0.92	1.17	1.80	1.00
7	3.32	15.14	10.37	7.83	38.69	122.73	2.78	0.66	0.90	1.11	1.82	1.40
8	3.29	13.41	10.19	7.88	46.04	107.51	2.63	0.75	0.92	1.07	1.78	1.41
9	2.79	15.19	9.70	7.99	71.78	94.13	2.36	0.66	0.91	1.01	2.17	1.81
10	3.31	14.02	8.92	8.27	60.23	95.06	2.53	0.70	0.92	1.00	2.20	2.64
11	3.22	11.92	9.05	10.19	42.71	86.18	2.47	0.72	1.18	1.03	1.97	2.59
12	3.27	12.61	8.94	9.70	29.95	84.52	2.47	0.71	1.11	1.14	1.87	1.47
13	4.42	14.47	8.80	9.50	25.52	75.97	2.18	0.73	0.99	1.13	1.87	1.01
14	6.13	12.09	8.09	9.81	26.58	69.85	1.99	0.73	0.93	1.06	1.61	0.91
15	6.29	10.66	7.81	9.39	34.40	61.15	1.70	0.78	0.91	1.15	1.46	1.12
16	5.99	12.07	10.96	8.05	52.02	52.15	1.59	0.84	0.88	1.11	1.46	1.52
17	4.46	14.21	20.64	8.36	80.44	48.92	1.56	0.79	0.85	1.14	1.45	1.70
18	3.77	16.08	20.52	8.54	86.73	49.78	1.44	0.83	0.81	1.11	2.45	2.14
19	6.19	9.50	17.98	8.74	93.72	41.01	1.39	1.07	0.86	1.08	2.79	2.20
20	8.13	9.86	16.08	7.94	97.08	33.54	1.39	0.92	0.82	1.17	1.60	2.10
21	91.18	11.05	15.94	8.68	91.70	34.04	1.29	0.75	0.79	1.15	1.39	2.00
22	50.03	11.78	17.17	8.68	100.18	33.71	1.35	0.73	0.74	1.12	1.23	2.21
23	17.22	13.64	19.58	12.01	97.03	31.75	1.47	0.58	0.81	1.07	1.19	2.55
24	13.34	14.04	15.68	13.63	80.60	28.83	1.47	0.36	0.84	1.22	1.10	2.83
25	14.42	14.51	13.12	16.45	60.26	26.31	1.24	0.40	0.78	1.16	1.01	5.36
26	12.21	14.12	13.03	17.29	52.35	22.26	1.13	0.71	0.84	1.26	0.97	8.18
27	29.99	12.57	12.21	17.41	53.59	18.69	1.28	0.76	0.80	1.32	0.92	7.93
28	44.83	13.05	11.36	17.42	53.52	15.78	1.06	0.90	0.77	1.91	1.11	6.70
29	64.84	---	11.71	16.15	51.63	11.53	0.93	0.78	0.81	1.51	1.13	4.93
30	35.39	---	10.28	15.83	48.46	8.21	0.84	0.76	0.96	1.53	0.98	3.58
31	40.40	---	11.25	---	65.46	---	0.67	0.65	---	1.82	---	3.63
MEAN	15.98	14.50	12.64	10.56	52.68	58.65	2.29	0.72	0.88	1.20	1.62	2.67
INCHES	0.204	0.167	0.162	0.131	0.674	0.725	0.029	0.009	0.011	0.015	0.020	0.034
NOTES: TO CONVERT CFS TO IN/DAY, MULTIPLY BY 0.000413.												

1967 SELECTED RUNOFF EVENT			REYNOLDS, IDAHO WATERSHED 4-1 (58 036068)							
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)
Event of June 7-8, 1967										
f = 7	RG 155016 .10	1/.011	m = 7	RG 155016			m = 7			
				1202	.0000	.00		1200	20.778	.0000
				1215	.3224	.37		1300	40.478	.0014
				1302	.0510	.11		1315	92.730	.0017
				1340	.3473	.33		1345	109.776	.0026
				1415	.0514	.34		1400	150.417	.0031
				1435	.1801	.42		1420	154.902	.0040
				1657	.0144	.44		1445	143.134	.0051
								1500	130.524	.0057
								1530	139.624	.0069
								1545	166.708	.0075
								1550	211.410	.0078
								1630	204.402	.0105
								1700	207.916	.0128
								1800	210.508	.0168
								2000	170.706	.0235
								2200	131.414	.0287
								2400	111.772	.0329

NOTES: TO CONVERT CFS TO IN/HR, MULTIPLY BY .00001717. 1/ RUNOFF PRIOR TO 1200 ON 6-7-67



REYNOLDS, IDAHO WATERSHED W-1 (68036068)

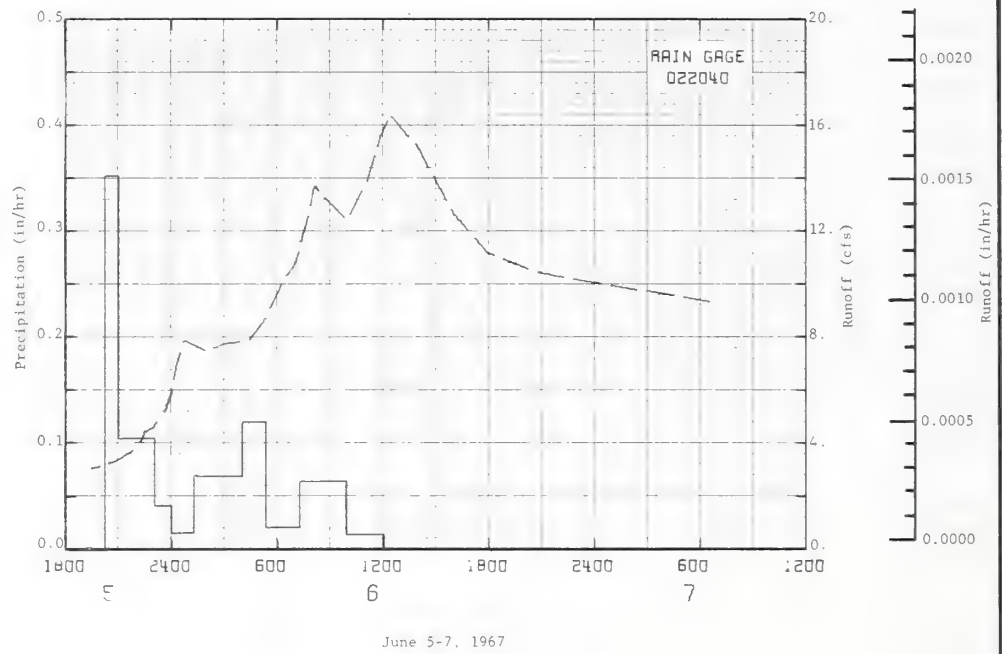
MONTHLY PRECIPITATION AND RUNOFF (inches)						REYNOLDS, IDAHO WATERSHED W-2 (SALMON CREEK 68 046017) AREA—8,990 ACRES (14.05 SQ.MILES)										
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967	3.37	1.01	.57	2.07	1.61	2.97	.04	.00	.88	1.54	1.36	.84	16.26			
PL/ Q	.458	.399	.325	.421	.391	.365	.033	.003	.003	.022	.048	.067	2.535			
STA AVG (65-67)	3.02	.77	.58	1.57	1.92	1.67	.10	1.29	.57	.90	2.07	1.07	15.53			
P 2/ Q	.772	.430	.286	.353	.412	.213	.036	.093	.038	.048	.073	.106	2.860			
MEAN 28 YR	1.32	1.33	1.32	1.16	1.29	.89	.21	.16	.39	.84	1.20	1.32	11.43			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
	DATE	RATE	1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
1967	1-21	.009	1-21	.009	1-21	.017	1-21	.044	1-21	.074	1-21	.103	1-21	.133	1-21	.261
MAXIMUMS FOR PERIOD OF RECORD																
19 65 TO 1967	08-23 1965	.073	08-23 1965	.044	08-23 1965	.056	01-28 1965	.114	01-28 1965	.208	01-28 1965	.379	01-28 1965	.766	01-28 1965	1.495
NOTES: Watershed Conditions: Predominately sagebrush rangeland, 99%; irrigated pasture and hay crops, 1%. For Maximum and Minimum Daily Air Temperatures, see Table for Watershed W-1, p. 68.1-1. 1/ Precipitation values are Thiessen weighted from gages 012029, 022040, and 024095. 2/ Mean P based on 28-yr (1939-66) U.S. Weather Bureau record period at Boise, Idaho; 50 miles N.E. of watershed.																
1967 DAILY PRECIPITATION (inches)						REYNOLDS, IDAHO WATERSHED W-2 (SALMON CREEK 68 046017)										
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC				
1	0.0	0.0	0.0	0.0	0.13	0.71	0.0	0.0	0.0	0.06	0.0	0.0				
2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.45	0.0	0.0				
3	0.07	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.01				
4	0.09	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
5	0.04	0.0	0.0	0.09	0.0	0.37	0.0	0.0	0.0	0.14	0.0	0.32				
6	0.09	0.0	0.0	0.10	0.0	0.55	0.0	0.0	0.0	0.03	0.0	0.0				
7	0.0	0.0	0.0	0.02	0.0	0.22	0.02	0.0	0.0	0.0	0.0	0.18				
8	0.0	0.0	0.0	0.0	0.0	0.06	0.0	0.0	0.02	0.0	0.01	0.01				
9	0.0	0.0	0.07	0.0	0.02	0.03	0.0	0.0	0.0	0.0	0.21	0.0				
10	0.0	0.0	0.05	0.0	0.06	0.18	0.0	0.0	0.0	0.0	0.14	0.02				
11	0.0	0.0	0.04	0.25	0.02	0.0	0.0	0.0	0.63	0.29	0.0	0.02				
12	0.09	0.0	0.07	0.02	0.17	0.19	0.0	0.0	0.07	0.0	0.0	0.04				
13	0.15	0.18	0.03	0.0	0.0	0.02	0.0	0.0	0.0	0.0	0.0	0.0				
14	0.0	0.23	0.0	0.09	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
15	0.0	0.06	0.0	0.06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
16	0.0	0.22	0.02	0.0	0.0	0.0	0.02	0.0	0.0	0.0	0.0	0.0				
17	0.0	0.0	0.0	0.11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.02				
18	0.0	0.21	0.07	0.04	0.0	0.0	0.0	0.0	0.0	0.0	0.61	0.14				
19	0.0	0.01	0.0	0.13	0.0	0.18	0.0	0.0	0.0	0.0	0.17	0.02				
20	0.27	0.0	0.0	0.16	0.0	0.03	0.0	0.0	0.0	0.0	0.0	0.0				
21	1.43	0.0	0.0	0.01	0.0	0.20	0.0	0.0	0.0	0.08	0.0	0.0				
22	0.11	0.0	0.0	0.08	0.0	0.19	0.0	0.0	0.0	0.02	0.0	0.0				
23	0.0	0.0	0.03	0.62	0.0	0.0	0.0	0.0	0.0	0.0	0.01	0.01				
24	0.09	0.0	0.0	0.01	0.0	0.0	0.0	0.0	0.0	0.0	0.01	0.0				
25	0.0	0.10	0.0	0.04	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.02				
26	0.22	0.0	0.0	0.05	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
27	0.03	0.0	0.0	0.06	0.0	0.04	0.0	0.0	0.0	0.04	0.0	0.0				
28	0.05	0.0	0.04	0.10	0.0	0.0	0.0	0.0	0.0	0.43	0.02	0.0				
29	0.0	---	0.06	0.03	0.24	0.0	0.0	0.0	0.10	0.0	0.18	0.0				
30	0.03	---	0.01	0.0	0.48	0.0	0.0	0.0	0.06	0.0	0.0	0.0				
31	0.61	---	0.08	---	0.49	---	0.0	0.0	---	0.0	---	0.03				
TOTAL	3.37	1.01	0.57	2.07	1.61	2.97	0.04	0.0	0.88	1.54	1.36	0.84				
STA AV	3.02	0.77	0.58	1.57	1.92	1.67	0.10	1.29	0.57	0.90	2.07	1.07				
NOTES: PRECIPITATION AMOUNTS ARE THIESSEN WEIGHTED VALUES FROM GAGES 012029, 022040, AND 024095. STA AV BASED ON RECORD PERIOD 1965-67. FOR MAP OF WATERSHED SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1965, P. 68.2-7. TOTAL PRECIPITATION FOR YEAR = 15.26 INCHES.																

1967 MEAN DAILY DISCHARGE (cfs)						REYNOLDS, IDAHO WATERSHED W-2 (SALMON CREEK 68 046017)						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	1.30	8.32	5.01	3.88	7.56	6.44	1.13	0.06	0.02	0.15	0.42	0.65
2	1.15	7.26	4.77	3.80	7.30	6.30	1.05	0.06	0.02	0.23	0.45	0.66
3	1.27	7.04	4.02	3.73	7.10	4.62	1.02	0.05	0.02	0.31	0.47	0.83
4	1.63	7.37	3.36	3.73	6.94	3.85	0.96	0.05	0.02	0.18	0.49	0.84
5	1.24	7.13	3.80	3.92	7.09	3.54	0.87	0.05	0.02	0.19	0.45	1.03
6	1.10	6.18	3.91	3.88	7.35	11.24	0.78	0.05	0.02	0.21	0.46	0.47
7	1.40	5.98	3.61	4.04	8.46	8.91	0.77	0.04	0.02	0.20	0.48	0.73
8	1.17	5.46	3.62	3.79	8.81	9.35	0.74	0.04	0.02	0.19	0.38	0.58
9	1.06	5.25	3.45	3.91	8.66	9.51	0.65	0.04	0.02	0.17	0.55	0.63
10	1.20	4.66	3.53	3.81	7.84	7.16	0.54	0.03	0.02	0.17	0.57	0.73
11	1.18	4.33	3.37	4.22	7.02	6.53	0.48	0.02	0.02	0.16	0.50	0.70
12	2.33	4.21	3.30	4.68	6.61	6.41	0.37	0.02	0.02	0.25	0.47	0.42
13	2.73	4.36	3.11	4.89	5.95	5.39	0.28	0.02	0.04	0.26	0.45	0.24
14	2.47	4.01	2.89	5.14	5.38	4.82	0.26	0.02	0.05	0.27	0.49	0.29
15	2.65	4.01	2.71	4.92	4.59	4.36	0.22	0.02	0.06	0.24	0.48	0.33
16	2.38	4.15	2.88	4.60	3.64	3.98	0.21	0.02	0.06	0.23	0.52	0.39
17	2.08	5.45	3.47	4.56	2.88	3.75	0.25	0.02	0.06	0.23	0.54	0.55
18	1.85	6.11	4.00	4.63	2.45	3.44	0.21	0.02	0.05	0.26	1.08	0.83
19	2.48	5.10	3.94	4.59	2.11	3.43	0.21	0.02	0.06	0.21	1.42	0.94
20	2.63	4.50	3.83	4.54	2.70	3.16	0.23	0.02	0.06	0.28	0.99	0.66
21	28.52	4.76	4.05	4.79	3.14	3.66	0.22	0.02	0.06	0.27	0.83	0.53
22	21.02	4.62	4.52	4.76	2.75	3.41	0.22	0.02	0.05	0.27	0.70	0.59
23	8.78	5.11	5.03	6.08	2.43	2.81	0.15	0.03	0.06	0.21	0.70	0.67
24	6.20	5.25	5.06	7.45	2.36	2.37	0.14	0.03	0.06	0.27	0.68	0.71
25	5.61	5.33	4.75	8.72	2.68	2.03	0.12	0.03	0.05	0.25	0.62	1.51
26	5.43	4.97	4.79	8.77	2.61	1.85	0.10	0.03	0.03	0.28	0.58	2.06
27	9.84	4.87	4.45	8.64	2.08	2.07	0.08	0.02	0.05	0.35	0.47	1.82
28	13.03	4.98	4.45	8.55	1.38	1.80	0.08	0.02	0.07	0.76	0.69	1.46
29	15.83	---	4.58	8.14	2.16	1.45	0.06	0.02	0.06	0.50	0.72	1.25
30	11.22	---	4.05	7.92	2.23	1.25	0.07	0.02	0.10	0.46	0.60	0.95
31	12.14	---	4.37	---	3.45	---	0.06	0.02	---	0.46	---	1.07
MEAN	5.58	5.38	3.96	5.30	4.77	4.60	0.41	0.03	0.04	0.27	0.61	0.81
INCHES	0.458	0.399	0.325	0.421	0.391	0.365	0.033	0.003	0.003	0.022	0.048	0.067

NOTES: TO CONVERT CFS TO IN/DAY, MULTIPLY BY 0.002648.

1967 SELECTED RUNOFF EVENT						REYNOLDS, IDAHO WATERSHED W-2 (SALMON CREEK 68 046017)					
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)	
Event of June 5-7, 1967											
6-5	RG 022040 0.00	1/0.017	6-5	RG 2015	0.0000	0.00	6-5	1930	3.062	0.0000	
				2101	0.3522	0.27		2059	3.390	0.0005	
				2301	0.1050	0.48		2143	3.734	0.0008	
				2400	0.0406	0.52		2214	4.090	0.0011	
				0114	0.0157	0.54		2230	4.462	0.0012	
				0402	0.0686	0.73		2258	4.654	0.0014	
				0522	0.1200	0.86		2330	5.056	0.0017	
				0715	0.0212	0.93		2400	5.928	0.0020	
				0830	0.0640	1.01	6-6	0018	7.050	0.0022	
				0953	0.0650	1.10		0042	7.900	0.0025	
				1204	0.0137	1.13		0155	7.470	0.0036	
								0255	7.750	0.0044	
								0425	7.900	0.0057	
								0518	8.664	0.0065	
								0606	9.854	0.0073	
								0701	10.786	0.0084	
								0740	12.420	0.0092	
								0806	13.708	0.0098	
								0855	13.080	0.0110	
								0958	12.420	0.0125	
								1106	13.912	0.0141	
								1149	15.540	0.0153	
								1224	16.420	0.0163	
								1401	15.120	0.0191	
								1501	12.640	0.0222	
								1755	11.170	0.0247	
								2055	10.402	0.0283	
								2400	10.032	0.0317	
							6-7	0631	9.320	0.0387	
								1258	8.350	0.0450	

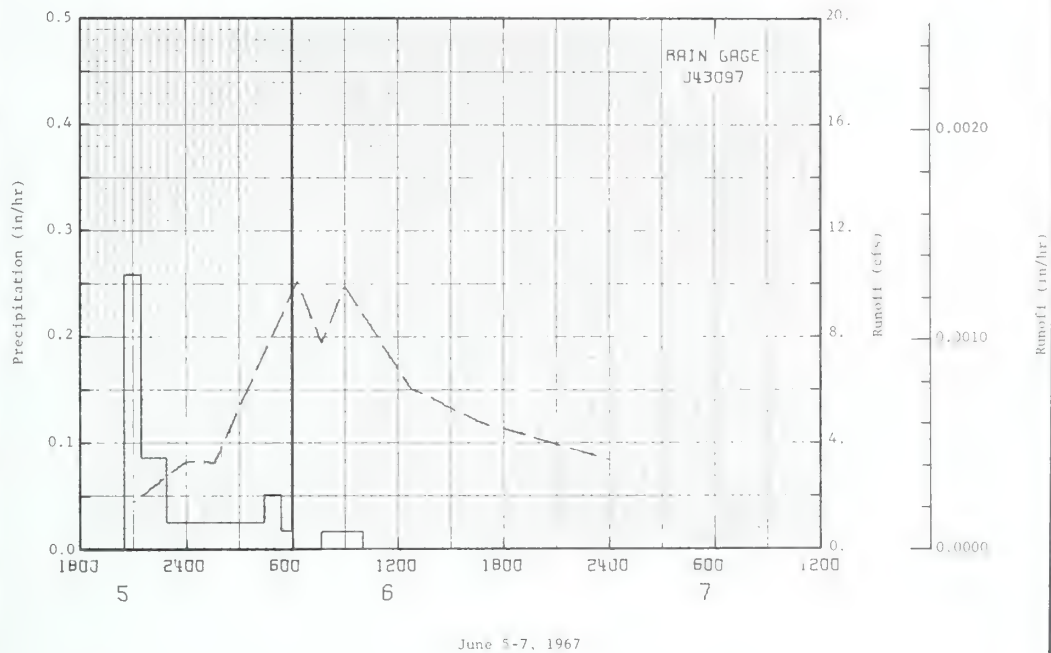
NOTES: TO CONVERT CFS TO IN/HR, MULTIPLY BY 0.0001103. 1/ RUNOFF PRIOR TO 1930 ON 6-5-67.



REYNOLDS, IDAHO WATERSHED W-2 (68046017)

MONTHLY PRECIPITATION AND RUNOFF (inches)						REYNOLDS, IDAHO WATERSHED W-3 (MACKS CREEK 68 046084 AREA—7,846 ACRES (12.26 SQ.MILES)										
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967 P1/ Q	3.83 .433	.94 .296	.53 .226	1.95 .249	1.26 .243	1.86 .208	.10 .014	.00 .004	.98 .002	1.67 .003	1.63 .006	1.07 .029	15.82 1.713			
STA AVG P Q	2.44 .250	.88 .120	.84 .212	1.19 .182	.88 .144	1.18 .110	.05 .009	.03 .003	.68 .002	1.24 .002	2.68 .004	1.36 .029	13.45 1.067			
MEAN P2/ 28 YR	1.32	1.33	1.32	1.16	1.29	.89	.21	.16	.39	.84	1.20	1.32	11.43			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		5 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	1-21	.011	1-21	.010	1-21	.020	1-21	.053	1-21	.096	1-21	.124	1-21	.150	1-21	.286
MAXIMUMS FOR PERIOD OF RECORD																
1966 TO 1967	1-21 1967	.011	1-21 1967	.010	1-21 1967	.020	1-21 1967	.053	1-21 1967	.096	1-21 1967	.124	1-21 1967	.150	1-21 1967	.286
NOTES Watershed Conditions: WATERSHED CONDITIONS same as that described in Hydrologic Data for Experimental Agricultural Watersheds in the United States, 1966, USDA Misc. Pub. 1226, P. 68.3-2. 1/ Precipitation values are Thiessen weighted from gages 043097, 054088, and 072067. 2/ Mean P based on 28-yr (1939-66) U.S. Weather Bureau record period at Boise, Idaho; 50 miles N.E. of watershed.																
1967 DAILY PRECIPITATION (inches)						REYNOLDS, IDAHO WATERSHED W-3 (MACKS CREEK 68 046084)										
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC				
1	0.0	0.0	0.0	0.0	0.0	0.38	0.0	0.0	0.0	0.06	0.0	0.0				
2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.46	0.0	0.0				
3	0.09	0.0	0.0	0.0	0.09	0.0	0.01	0.0	0.0	0.0	0.0	0.02				
4	0.05	0.0	0.0	0.01	0.03	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
5	0.05	0.0	0.0	0.0	0.0	0.24	0.0	0.0	0.0	0.25	0.0	0.34				
6	0.09	0.0	0.0	0.17	0.0	0.34	0.0	0.0	0.0	0.0	0.0	0.0				
7	0.0	0.0	0.0	0.02	0.0	0.06	0.22	0.0	0.0	0.0	0.0	0.14				
8	0.0	0.0	0.0	0.0	0.0	0.41	0.0	0.0	0.09	0.0	0.02	0.0				
9	0.0	0.0	0.03	0.0	0.16	0.0	0.0	0.0	0.0	0.0	0.24	0.0				
10	0.0	0.0	0.03	0.0	0.15	0.04	0.0	0.0	0.0	0.0	0.10	0.0				
11	0.0	0.0	0.05	0.20	0.05	0.0	0.0	0.0	0.71	0.31	0.0	0.0				
12	0.09	0.0	0.06	0.01	0.09	0.06	0.0	0.0	0.03	0.0	0.0	0.05				
13	0.13	0.27	0.03	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
14	0.0	0.16	0.0	0.03	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
15	0.0	0.08	0.0	0.03	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
16	0.0	0.18	0.04	0.0	0.0	0.0	0.05	0.0	0.0	0.0	0.0	0.03				
17	0.0	0.14	0.0	0.13	0.0	0.0	0.02	0.0	0.0	0.0	0.0	0.05				
18	0.0	0.02	0.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.90	0.16				
19	0.0	0.01	0.0	0.10	0.0	0.02	0.0	0.0	0.0	0.0	0.12	0.01				
20	0.45	0.0	0.02	0.09	0.0	0.04	0.0	0.0	0.0	0.0	0.0	0.0				
21	1.72	0.0	0.01	0.06	0.0	0.16	0.0	0.0	0.0	0.10	0.0	0.01				
22	0.06	0.0	0.0	0.06	0.0	0.05	0.0	0.0	0.0	0.0	0.0	0.0				
23	0.0	0.0	0.0	0.55	0.0	0.0	0.0	0.0	0.0	0.0	0.03	0.08				
24	0.11	0.0	0.0	0.03	0.0	0.0	0.0	0.0	0.0	0.0	0.02	0.0				
25	0.0	0.08	0.01	0.12	0.0	0.0	0.0	0.0	0.0	0.02	0.0	0.08				
26	0.17	0.0	0.0	0.09	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.02				
27	0.04	0.0	0.0	0.01	0.0	0.06	0.0	0.0	0.0	0.05	0.0	0.03				
28	0.02	0.0	0.04	0.11	0.02	0.0	0.0	0.0	0.0	0.42	0.06	0.0				
29	0.04	---	0.05	0.04	0.10	0.0	0.0	0.0	0.12	0.0	0.14	0.0				
30	0.06	---	0.0	0.09	0.10	0.0	0.0	0.0	0.03	0.0	0.0	0.0				
31	0.66	---	0.06	---	0.47	0.0	0.0	0.0	---	0.0	---	0.05				
TOTAL	3.83	0.94	0.53	1.95	1.26	1.86	0.10	0.0	0.98	1.67	1.63	1.07				
STA AV	2.44	0.88	0.84	1.19	0.88	1.18	0.05	0.03	0.68	1.24	2.68	1.36				
NOTES PRECIPITATION AMOUNTS ARE THIESSEN WEIGHTED VALUES FROM GAGES 043097, 054088, AND 072067. STA AV BASED ON 1966-67 RECORD PERIOD ONLY. FOR MAP OF WATERSHED SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1966, P. 68.3-4. TOTAL PRECIPITATION FOR YEAR = 15.82 INCHES.																

1967 MEAN DAILY DISCHARGE (cfs)						REYNOLDS, IDAHO WATERSHED W-3 (MACKS CREEK 68 046084)						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	0.25	6.73	2.02	1.91	5.10	4.43	0.46	0.03	0.03	0.02	0.04	0.10
2	0.25	5.16	2.79	1.81	4.60	3.36	0.36	0.04	0.03	0.02	0.04	0.10
3	0.29	5.11	2.11	1.74	4.32	2.14	0.25	0.04	0.03	0.02	0.04	0.11
4	0.36	5.48	1.85	1.74	4.10	1.76	0.22	0.03	0.03	0.02	0.04	0.11
5	0.26	4.60	2.09	1.87	3.83	1.91	0.22	0.03	0.03	0.02	0.04	0.33
6	0.19	3.75	1.91	1.87	3.53	5.88	0.19	0.05	0.02	0.02	0.04	0.11
7	0.26	3.39	1.93	1.82	3.72	2.98	0.15	0.05	0.02	0.02	0.04	0.13
8	0.29	3.28	2.02	1.63	3.45	6.17	0.17	0.05	0.02	0.02	0.04	0.11
9	0.27	2.99	2.10	1.62	3.58	4.59	0.19	0.06	0.03	0.02	0.04	0.11
10	0.25	2.72	1.63	1.54	3.49	3.43	0.16	0.06	0.03	0.03	0.04	0.13
11	0.26	2.46	1.97	1.88	3.31	3.20	0.13	0.05	0.03	0.03	0.04	0.15
12	0.29	2.60	1.95	1.77	3.24	2.99	0.11	0.03	0.03	0.03	0.04	0.14
13	0.55	3.24	1.80	1.67	3.16	2.57	0.10	0.03	0.03	0.03	0.04	0.13
14	0.69	2.81	1.65	1.61	3.00	2.27	0.09	0.03	0.02	0.03	0.04	0.12
15	0.70	2.43	1.52	2.23	2.55	1.93	0.09	0.03	0.02	0.03	0.04	0.16
16	0.52	2.95	2.27	1.84	1.78	1.77	0.10	0.03	0.02	0.03	0.04	0.15
17	0.37	4.26	3.42	1.92	1.48	1.67	0.12	0.03	0.02	0.03	0.04	0.19
18	0.35	4.85	3.26	1.95	1.38	1.53	0.12	0.03	0.02	0.04	0.16	0.24
19	0.51	3.22	3.30	2.03	1.46	1.36	0.11	0.03	0.02	0.04	0.13	0.21
20	0.53	2.91	3.00	1.85	1.56	1.28	0.11	0.03	0.02	0.04	0.06	0.15
21	32.50	2.90	2.65	2.13	1.78	1.78	0.11	0.03	0.02	0.04	0.06	0.12
22	16.83	2.84	3.08	2.06	1.62	1.74	0.10	0.05	0.02	0.04	0.06	0.10
23	3.77	3.21	3.40	3.49	1.62	1.53	0.08	0.04	0.02	0.04	0.06	0.13
24	2.30	3.41	3.35	4.05	1.50	1.21	0.10	0.04	0.02	0.03	0.07	0.21
25	2.90	3.43	3.10	4.98	1.46	1.08	0.07	0.04	0.02	0.03	0.08	0.94
26	2.86	3.23	3.01	5.77	1.48	0.81	0.06	0.04	0.02	0.03	0.08	1.52
27	14.62	2.32	2.51	6.28	1.41	0.89	0.04	0.04	0.02	0.03	0.08	1.25
28	18.51	1.44	2.28	6.18	1.35	0.84	0.04	0.04	0.02	0.03	0.08	0.79
29	18.72	---	2.16	5.63	1.37	0.69	0.06	0.04	0.02	0.03	0.08	0.55
30	10.79	---	2.00	5.30	1.15	0.61	0.07	0.04	0.02	0.04	0.09	0.35
31	11.57	---	2.24	---	2.78	---	0.29	0.03	---	0.04	---	0.46
MEAN	4.61	3.49	2.40	2.74	2.59	2.28	0.14	0.04	0.02	0.03	0.06	0.30
INCHES	0.433	0.296	0.226	0.249	0.243	0.208	0.014	0.004	0.002	0.003	0.006	0.029
NOTES TO CONVERT CFS TO IN/DAY, MULTIPLY BY 0.003034.												
1967 SELECTED RUNOFF EVENT						REYNOLDS, IDAHO WATERSHED W-3 (MACKS CREEK 68 046084)						
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF					
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)		
Event of June 5-7, 1967												
6-5	RG 043097 .00	1/.005	6-5	RG 2032	.0000	.00	6-5	2104	1.791	.0000		
				2130	.2585	.25		2400	3.328	.0009		
				2254	.0857	.37	6-6	0137	3.239	.0016		
			6-6	0425	.0253	.51		0619	10.095	.0056		
				0523	.0517	.56		0742	7.745	.0071		
				0550	.0166	.57		0900	9.900	.0086		
				0605	.4955	.62		1245	6.000	.0124		
				0742	.0000	.62		1348	5.703	.0131		
				1002	.0171	.66		1536	4.770	.0150		
								2400	3.328	.0188		
NOTES: TO CONVERT CFS TO IN/HR, MULTIPLY BY .00012640. 1/ RUNOFF PRIOR TO 2104 ON 6-5-67												



REYNOLDS, IDAHO WATERSHED W-3 (68046084)

REYNOLDS, IDAHO WATERSHED W-4 (TOLLGATE 68 116083)

LOCATION: Owyhee County, Idaho; 40 miles south of Nampa; main stem of Reynolds Creek which is tributary to the Snake River.

AREA: 13,453 acres (21.02 sq. miles).

SLOPES:	Slope-Percent	0-5	5-10	10-20	20-40
	Percent of Area	23	28	18	31

SOILS: Residual, derived mostly from basalt; lesser amounts from granite and rhyolite.

Soil (Series)	Per- cent of area	Topsoil			Subsoil		Substratum		
		Avg. depth (in.)	Structure	Perme- ability	Structure	Perme- ability	Avg. depth to(in.)	Perme- ability	Internal drainage
Takeuchi coarse sandy loam, rocky coarse sandy loam, very rocky coarse sandy loam, very stony coarse sandy loam	14.6	3	Weak thin platy parting to moderate very fine granular structure	Moderate	Moderate or weak medium and fine subangular blocky parting to weak fine and medium granular	Moder- ate	40	Very slow or none	Medium
Gabica cobbly grav- elly loam, very grave- lly loam, rocky loam, very rocky loam, stony loam, very stony loam	21.1	5	Weak thin and med- ium platy parting to moderate fine and medium granular	Moderate	Weak fine subangular blocky parting to moderate fine gran- ular	Moder- ately slow	20	Very slow or none	Medium
Harmehl cobbly loam, gravelly loam, stony gravelly loam, very gravelly loam, loam, stony loam	13.2	5	Moderate or strong fine and very fine granular	Moderate	Moderate fine and medium subangular blocky	Moder- ately slow	40	Very slow or none	Medium
Harmehl-Demast gravelly loam, stony gravelly loam, loam, stony loam, rocky stony loam	10.5	-	See characteristics of Harmehl and Demast Series						
Nettleton gravelly loam, stony gravelly loam, loam	9.0	8	Very weak very thin platy parting to moderate or strong very fine granular	Moderate	Weak coarse prismatic parting to moderate or strong coarse and medium angular blocky	Moder- ately slow	60	Very slow or none	Medium
Demast loam, grav- elly loam, stony loam	6.7	10	Very weak very thin platy upper 2 in. parting to strong very fine and fine granular	Moderate	Weak medium prismatic parting to weak medium and fine subangular blocky then moderate fine gran- ular	Moder- ate	60	Very slow or none	Medium

SOILS-CONTINUED

Soil (Series)	Per- cent of area	Topsoil			Subsoil		Substratum		
		Avg. depth (in.)	Structure	Perme- ability	Structure	Perme- ability	Avg. depth to (in.)	Perme- ability	Internal drainage
Kanlee coarse sandy loam, very rocky coarse sandy loam	6.0	5	Moderate or strong very fine granular structure	Moderate	Weak medium fine and very fine subangular blocky parting to weak fine and medium granular	Moder- ately slow	40	Very slow or none	Medium
Gemid very cobbly loam, grave- lly loam, loam, stony loam, very stony loam	4.6	5	Weak very thin and platy parting to moderate fine very fine and medium granular	Moderate	Strong medium prismatic parting to moderate medium and coarse angular blocky	Slow to very slow	50	Very slow or none	Medium
Additional Series	14.3	—	—	—	—	—	—	—	—
Total	100%								

EROSION:

Erosion class	1	2	3	4	5	+
Percent of area	41	32	16	11	0	0

LAND CAPABILITY:

Class	I	II	III	IV	V	VI	VII	VIII
Percent of area	0	0	0	55	63	17	12	3

GEOLOGY: The Tollgate Watershed (W-4) lies in the closing end of a synclinal trough with granite extrusives along the outer perimeters. The geologic formations are composed of approximately 65% basalt, 30% granite, and 5% rhyolite and latite extrusives. Faulting is minimal and insignificant as a hydrologic factor. Aquifers occur in the basalt but are of low transmissivity. For geologic map of Reynolds Creek watershed, see Hydrologic Data for Experimental Agricultural Watersheds in the United States, 1963, USDA Misc. Pub. 1164, P. 68.1-10. Source of geological data: Cenozoic geology of Reynolds Creek Watershed, Owyhee Co., Idaho, by David H. McIntyre, Idaho Bureau of Mines and Geology Bulletin (In Print).

SURFACE DRAINAGE: Good; length of principal waterway 6.5 miles; overall slope 8%; a natural watershed with defined incised channels.

CHARACTER OF FLOW: Perennial stream.

INSTRUMENTATION: Runoff: Precalibrated 7000 c.f.s. capacity drop-box weir; three water stage recorders; low flow rating by volumetric and current meter measurements. Precipitation: 27 Belfort recording rain gages with 24-hour time scales.

WATERSHED CONDITIONS: The watershed is generally sagebrush rangeland except for scattered stands of Douglas fir and aspen and mountain meadows. The topography is steep with numerous rock outcrops on the ridges. The watershed is used mainly for cattle grazing except during the winter when snow blankets most of the area. Vegetation consists predominantly of big sagebrush, little sagebrush, rabbitbrush, snowberry, bluebunch wheatgrass, Idaho fescue, and squirreltail grass. Cover percentages are:

Vegetative Cover percent	0-25	26-50	51-75	76-100
Percent of area	25	15	15	45

GENERALLY REPRESENTS: Partially forested sagebrush rangelands of mountainous areas between 4600 and 7300 feet elevation with a major portion of precipitation as snow. Represents large areas in south Idaho, eastern Washington and Oregon, and portions of other western states.

MONTHLY PRECIPITATION AND RUNOFF (inches)						REYNOLDS, IDAHO WATERSHED W-4 (TOLLGATE 68 116083)										
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967 P1/ Q	5.40 .401	1.31 .352	1.24 .567	2.38 .730	1.98 3.871	2.47 2.853	.63 .391	.02 .065	.71 .035	1.62 .073	1.76 .093	1.45 .131	20.97 9.562			
STA AV 2/P 1967 Q	5.40 .401	1.31 .352	1.24 .567	2.38 .730	1.98 3.871	2.47 2.853	.63 .391	.02 .065	.71 .035	1.62 .073	1.76 .093	1.45 .131	20.97 9.562			
MEAN P 2/ 28 YR	1.32	1.33	1.32	1.16	1.29	.89	.21	.16	.39	.84	1.20	1.32	11.43			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	6-7	.021	6-7	.019	6-7	.036	6-7	.082	6-7	.129	6-7	.214	6-7	.417	5-17	1.523
MAXIMUMS FOR PERIOD OF RECORD																
1967 TO 1967	6-7 1967	.021	6-7 1967	.019	6-7 1967	.036	6-7 1967	.082	6-7 1967	.129	6-7 1967	.214	6-7 1967	.417	5-17 1967	1.523
NOTES Watershed Conditions: same as described above under WATERSHED CONDITIONS. 1/ Precipitation values are Thiessen weighted from 8 gages. 2/ STA AVG P and Q based on 1967 data only. 3/ Mean P based on 28-yr (1939-66) U.S. Weather Bureau record period at Boise, Idaho; 50 miles N.E. of watershed.																
1967 DAILY PRECIPITATION (inches)						REYNOLDS, IDAHO WATERSHED W-4 (TOLLGATE 68 116083)										
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC				
1	0.0	0.0	0.0	0.0	0.0	0.40	0.0	0.0	0.0	0.02	0.0	0.0				
2	0.0	0.0	0.0	0.0	0.0	0.12	0.08	0.0	0.0	0.53	0.0	0.0				
3	0.08	0.0	0.0	0.0	0.01	0.0	0.0	0.0	0.0	0.0	0.0	0.01				
4	0.08	0.0	0.0	0.03	0.14	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
5	0.09	0.0	0.0	0.16	0.0	0.34	0.0	0.0	0.0	0.22	0.0	0.34				
6	0.14	0.0	0.0	0.04	0.0	0.53	0.0	0.0	0.0	0.01	0.0	0.0				
7	0.0	0.0	0.0	0.03	0.0	0.41	0.0	0.0	0.0	0.0	0.0	0.28				
8	0.0	0.0	0.0	0.0	0.02	0.20	0.0	0.0	0.0	0.0	0.0	0.0				
9	0.0	0.0	0.01	0.0	0.15	0.02	0.0	0.0	0.0	0.0	0.19	0.0				
10	0.0	0.0	0.03	0.0	0.26	0.01	0.0	0.0	0.0	0.0	0.10	0.0				
11	0.0	0.0	0.22	0.15	0.08	0.0	0.0	0.0	0.60	0.13	0.0	0.02				
12	0.19	0.0	0.06	0.0	0.10	0.05	0.0	0.0	0.01	0.0	0.0	0.04				
13	0.15	0.36	0.04	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
14	0.0	0.18	0.02	0.07	0.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
15	0.0	0.21	0.0	0.18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
16	0.0	0.35	0.02	0.01	0.0	0.0	0.37	0.0	0.0	0.0	0.0	0.04				
17	0.0	0.11	0.0	0.07	0.0	0.0	0.18	0.0	0.0	0.0	0.0	0.06				
18	0.0	0.04	0.09	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.60	0.33				
19	0.0	0.0	0.02	0.14	0.0	0.02	0.0	0.0	0.0	0.0	0.20	0.0				
20	0.67	0.0	0.05	0.20	0.0	0.08	0.0	0.0	0.0	0.01	0.0	0.04				
21	2.13	0.0	0.0	0.04	0.0	0.24	0.0	0.0	0.0	0.14	0.0	0.06				
22	0.10	0.0	0.0	0.16	0.0	0.01	0.0	0.0	0.0	0.0	0.0	0.0				
23	0.0	0.0	0.03	0.40	0.0	0.0	0.0	0.0	0.0	0.0	0.03	0.02				
24	0.09	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.06	0.01				
25	0.01	0.06	0.0	0.14	0.0	0.0	0.0	0.0	0.0	0.01	0.0	0.09				
26	0.39	0.0	0.0	0.05	0.0	0.0	0.0	0.01	0.0	0.0	0.0	0.03				
27	0.17	0.0	0.0	0.10	0.0	0.04	0.0	0.0	0.0	0.04	0.0	0.04				
28	0.09	0.0	0.25	0.31	0.06	0.0	0.0	0.01	0.0	0.0	0.08	0.0				
29	0.20	---	0.16	0.0	0.13	0.0	0.0	0.0	0.06	0.51	0.50	0.0				
30	0.10	---	0.08	0.10	0.18	0.0	0.0	0.0	0.04	0.0	0.0	0.0				
31	0.72	---	0.16	---	0.84	---	0.0	0.0	---	0.0	---	0.04				
TOTAL	5.40	1.31	1.24	2.38	1.98	2.47	0.63	0.02	0.71	1.62	1.76	1.45				
STA AV	5.40	1.31	1.24	2.38	1.98	2.47	0.63	0.02	0.71	1.62	1.76	1.45				
NOTES PRECIPITATION AMOUNTS ARE THIESSEN WEIGHTED AMOUNTS FROM 6 GAGES. STA AV BASED ON 1967 RECORD PERIOD ONLY. FOR MAP OF WATERSHED SEE P. 68.4-6. TOTAL PRECIPITATION FOR YEAR = 20.97 INCHES.																

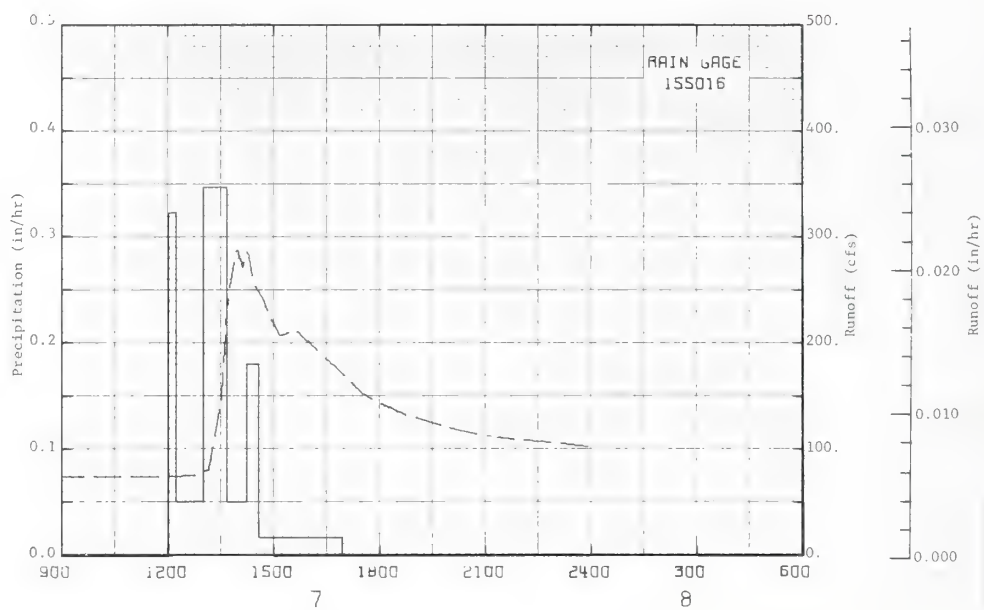
1967 MEAN DAILY DISCHARGE (cfs)						REYNOLDS, IDAHO WATERSHED W-4 (TOLLGATE 68 116083)						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	2.11	11.87	8.90	10.20	14.50	86.87	14.80	2.47	0.33	0.87	1.66	1.85
2	2.01	9.89	7.79	10.56	15.08	77.20	12.64	2.31	0.26	1.11	1.54	1.92
3	2.06	9.29	6.92	11.83	17.91	65.53	12.75	2.02	0.28	1.77	1.47	1.69
4	2.36	8.95	6.17	12.77	23.25	61.27	12.85	1.89	0.36	1.20	1.56	1.78
5	1.98	7.85	6.43	13.66	29.39	64.93	12.80	1.81	0.45	1.30	1.57	1.91
6	1.78	7.25	6.38	12.14	40.66	95.71	12.24	1.74	0.64	1.34	1.55	1.77
7	2.10	6.89	6.25	11.95	64.02	110.41	11.23	1.83	0.65	1.22	1.53	1.89
8	1.94	6.70	6.39	12.09	76.07	98.59	10.68	1.92	0.65	1.12	1.45	1.86
9	1.87	6.61	6.29	13.21	92.25	84.41	9.11	1.78	0.61	1.05	1.71	1.85
10	1.99	6.28	6.38	14.23	75.66	77.86	8.41	1.59	0.43	1.01	1.90	2.07
11	2.05	5.75	6.31	14.53	57.79	72.07	8.06	1.54	1.39	1.01	1.79	1.88
12	2.04	5.88	6.00	15.62	47.81	65.38	7.49	1.48	1.53	1.15	1.72	1.50
13	2.98	6.78	6.07	17.57	43.14	59.52	6.74	1.37	1.18	1.14	1.69	1.53
14	4.12	6.10	5.48	17.32	47.86	55.18	6.57	1.27	1.11	1.15	1.66	1.72
15	4.11	5.83	5.22	15.41	63.24	50.65	6.17	1.07	0.94	1.22	1.69	1.92
16	3.70	6.54	9.90	14.43	79.58	44.65	6.90	0.94	0.81	1.25	1.66	1.86
17	2.83	7.02	17.50	13.95	101.47	45.81	6.63	0.82	0.70	1.17	1.56	1.50
18	2.79	7.18	15.91	13.08	108.72	43.44	6.31	0.79	0.60	1.13	2.00	1.34
19	2.78	5.95	13.69	12.69	109.02	41.45	5.50	0.85	0.65	1.15	3.10	1.41
20	2.93	5.59	13.13	12.15	100.26	39.74	5.24	0.71	0.67	1.20	2.56	1.46
21	29.81	6.15	14.66	12.96	100.98	42.97	5.05	0.69	0.60	1.17	2.22	1.61
22	19.31	6.03	17.09	11.94	118.34	36.82	4.79	0.70	0.46	1.36	1.77	2.27
23	8.59	6.33	17.53	13.35	117.50	32.49	4.24	0.63	0.52	1.31	1.81	2.94
24	6.50	6.75	15.36	14.90	104.60	28.60	3.72	0.59	0.57	1.40	1.92	3.75
25	6.12	6.99	14.25	15.35	90.09	26.07	3.34	0.58	0.52	1.40	1.71	4.57
26	5.25	6.77	13.50	14.58	79.34	23.87	3.02	0.55	0.54	1.39	1.57	5.61
27	10.11	6.96	12.71	14.77	77.42	23.65	2.91	0.65	0.53	1.42	1.17	5.07
28	18.48	8.51	13.35	14.74	76.54	21.64	2.86	0.62	0.46	2.75	1.39	4.07
29	37.51	---	12.28	15.43	75.12	18.70	2.80	0.53	0.40	1.99	1.58	3.03
30	19.85	---	11.39	14.90	68.02	17.01	2.80	0.46	0.70	1.74	2.05	2.25
31	14.46	---	11.07	---	72.37	---	2.59	0.37	---	1.68	---	3.91
MEAN	7.31	7.10	10.33	13.74	70.58	53.75	7.14	1.18	0.65	1.33	1.75	2.38
INCHES	0.401	0.352	0.567	0.730	3.871	2.853	0.391	0.065	0.035	0.073	0.093	0.131

NOTES TO CONVERT CFS TO IN/DAY, MULTIPLY BY 0.001769.

NOTES: TO CONVERT CFS TO IN/DAY, MULTIPLY BY 0.001769.

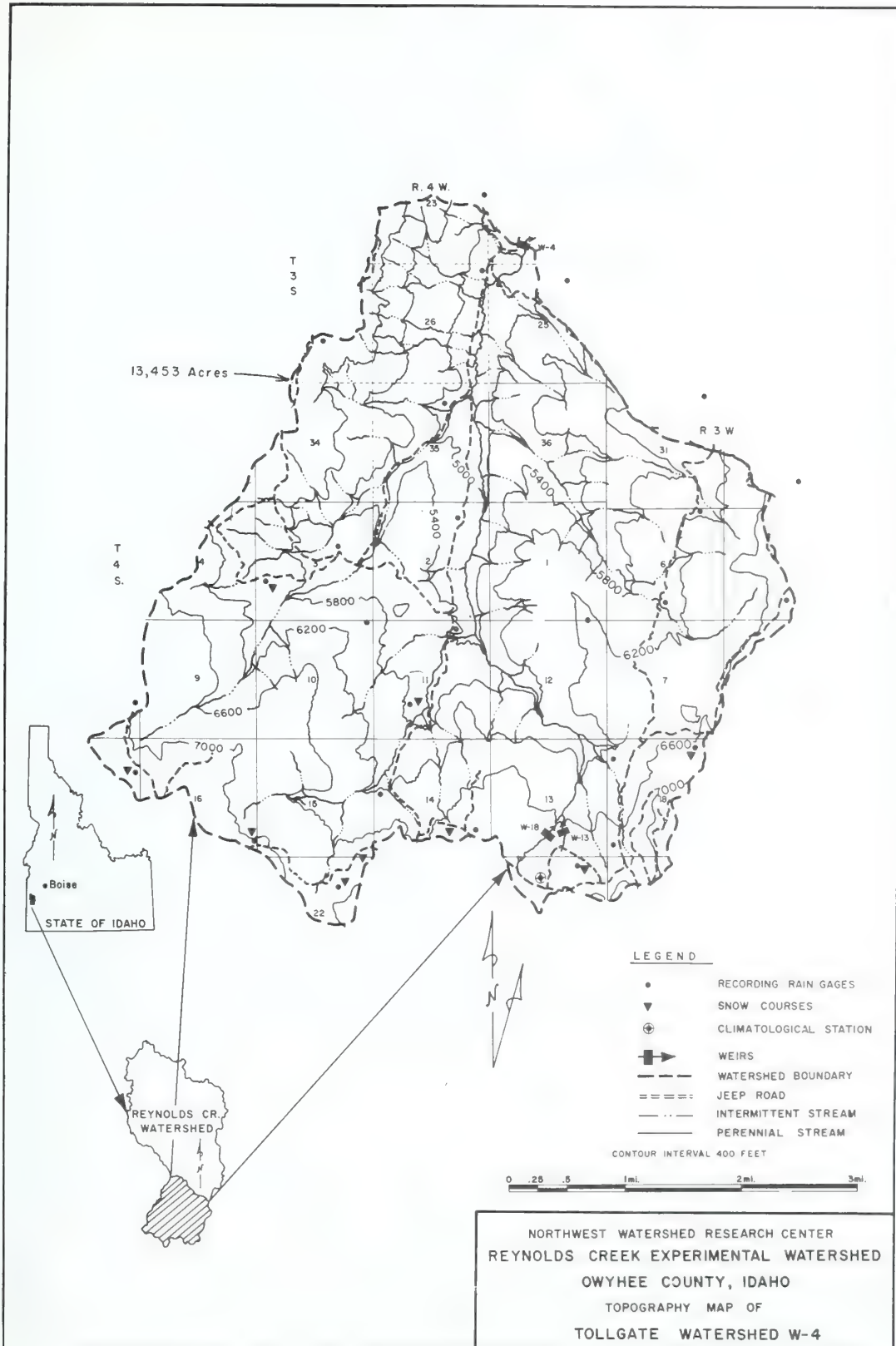
1967 SELECTED RUNOFF EVENT						REYNOLDS, IDAHO WATERSHED W-4 (TOLLGATE 68 116083)				
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)
Event of June 7-8, 1967										
6- 7	RG 155016 .30	1.351	6- 7	RG 1202	155016 .0000	.00	5- 7	0900	73.731	.0000
				1215	.3226	.07		1128	73.731	.0134
				1302	.0510	.11		1246	76.126	.0206
				1340	.3473	.33		1246	76.126	.0278
				1416	.0514	.36		1310	81.916	.0301
				1435	.1801	.42		1310	105.093	.0311
				1457	.0169	.46		1331	145.244	.0330
								1337	194.675	.0342
								1343	243.548	.0359
								1358	288.067	.0408
								1407	270.788	.0438
								1416	288.112	.0469
								1424	284.661	.0496
								1442	241.901	.0551
								1458	219.833	.0597
								1510	206.099	.0628
								1537	211.751	.0698
								1613	193.170	.0787
								1648	175.708	.0867
								1730	152.220	.0951
								1800	142.775	.1006
								1846	132.012	.1083
								1958	117.607	.1195
								2101	112.136	.1284
								2231	106.093	.1406
								2400	102.009	.1520

NOTES: TO CONVERT CFS TO IN/HR, MULTIPLY BY .00007372. 1/ RUNOFF PRIOR TO .00007372 ON 6-7-67



June 7-8, 1967

REYNOLDS, IDAHO WATERSHED W-4 (68116083)



REYNOLDS, IDAHO WATERSHED W-11 (MURPHY CREEK 68 043004)

LOCATION: Owyhee County, Idaho; 35 miles south of Nampa, Idaho; an east-flowing tributary to Reynolds Creek, tributary to the Snake River.

AREA: 306 acres

SLOPES:	Slope-Percent	5-10	10-20	20-30	30-40	40-50	50-60	60-70
	Percent of area	2	32	32	13	9	8	4

SOILS: Residual, derived mostly from basalt; lesser amounts from lacustrine sediments, granite and pediment alluvium and colluvium.

Soil (Series)	Per- cent of area	Topsoil			Subsoil		Substratum		
		Avg. depth (in.)	Structure	Perme- ability	Structure	Perme- ability	Avg. depth to(in.)	Perme- ability	Internal drainage
Harmehl-Demast stony loams	30.8	-	See characteristics for Harmehl and Demast Series						
Reywat-Bakeoven rocky loam, very stony loam, rocky very stony loam	19.5	-	See characteristics for Reywat and Bakeoven Series						
Bakeoven-Reywat very rocky very stony loam	15.6	-	See characteristics for Bakeoven and Reywat Series						
Ruclick- Babbington stony very gravelly loam, stony loam, rocky stony loam	13.0	-	See characteristics for Ruclick and Babbington Series						
Demast stony loam	7.2	10	Very weak very thin platy upper 2 in. part- ing to strong very fine and fine granular	Moderate	Weak medium prismatic parting to weak medium and fine subangular blocky thin moderate fine granu- lar	Moderate	60	Very slow or none	Medium
Nettleton gravelly loam	6.5	8	Very weak very thin platy part- ing to moderate or strong very fine granular	Moderate	Weak coarse prismatic parting to moderate or strong coarse and medium angular blocky	Moderately slow	60	Very slow or	Medium
Bakeoven extremely rocky loam very rocky loam	5.6	3	Weak very fine platy to granu- lar	Moderate	Weak very fine and subangular blocky	Moderate or moder- ately slow	7	Very slow or none	Medium
Additional Series	1.8	—	—	—	—	—	—	—	—
Total	100%								
Individual Series Descriptions Which Occur in Combinations Above									
Babbington		8	Weak very thin platy parting to weak very fine granu- lar	Moderate	Strong or moderate medium prismatic fine and very fine subangular blocky	Moderately slow	60	Very slow or none	Medium

SOILS-CONTINUED

Soil (Series)	Per- cent of area	Topsoil			Subsoil		Substratum		
		Avg. depth (in.)	Structure	Perme- ability	Structure	Perme- ability	Avg. depth to (in.)	Perme- ability	Internal drainage
Harmehl		5	Moderate or strong fine and very fine granular	Moderate	Moderate fine and medium subangular blocky	Moder- ately slow	40	Very slow or none	Medium
Ruclick		8	Weak very thin platy parting to moderate very fine granular	Moderate	Moderate fine prismatic parting to moderate fine angu- lar blocky	Moder- ately slow	39	Very slow or none	Medium
Reywat		10	Weak thin platy fine granular	Moderately rapid	Weak or moderate subangular blocky	slow to moderate	18	Very slow or none	Medium

EROSION:	Erosion class	1	2	3	4	5	+
	Percent of area	9	47	38	6	0	0

LAND CAPABILITY:	Class	I	II	III	IV	V	VI	VII	VIII
	Percent of area	0	0	0	0	20	55	20	5

GEOLOGY: The Murphy Creek Watershed lies along west dipping basalt and latite formations. Approximately 80% of the area is composed of basalt and 20% of latite. Several faults transect the watershed, but their hydrologic significance is not known. Aquifers occur in the basalt at considerable depth and are not capable of supporting pumping rates in excess of 5-8 g.p.m. For geologic map of Reynolds Creek watershed, see Hydrologic Data for Experimental Agricultural Watersheds in the United States, 1963, USDA Misc. Pub. 1164, P. 68.1-10. Source of geological data: Cenozoic geology of Reynolds Creek Watershed, Owyhee Co., Idaho, by David H. McIntyre, Idaho Bureau of Mines and Geology Bulletin (In Print).

SURFACE DRAINAGE: Good; length of principal waterway 1.57 miles; overall slope 17%; a natural watershed with well incised channels.

CHARACTER OF FLOW: Spring-fed intermittent stream.

INSTRUMENTATION: Runoff: Precalibrated 200 c.f.s. capacity drop-box weir; two water stage recorders; low-flow rating by volumetric and current meter measurements. Precipitation: 4 Belfort recording rain gages outside the watershed boundaries, 24-hour time scales.

WATERSHED CONDITIONS: The watershed is sagebrush rangeland used almost exclusively for cattle grazing. Willows are common along watercourses and in seep areas. Vegetation consists largely of big sagebrush, bitterbush, Idaho fescue, Sandberg bluegrass, bluebunch wheatgrass, squirreltail grass, and snowberry.

Vegetative Cover percentage	0-25	26-50	51-75	76-100
Percent of area	10	35	20	35

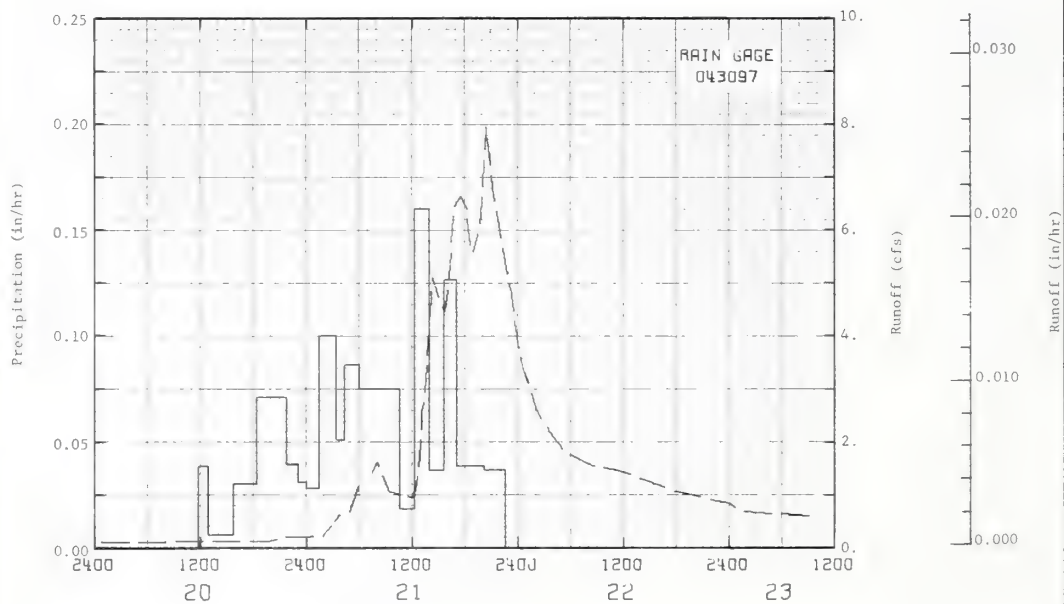
GENERALLY REPRESENTS: Sagebrush rangelands in the elevation range from 4600 to 6000 feet with steep slopes, eastward flowing streams, and less than 20 inches of precipitation annually. Similar to foothill and lower mountainous areas in south Idaho, eastern Oregon and Washington, and other western states.

MONTHLY PRECIPITATION AND RUNOFF (inches)						REYNOLDS, IDAHO WATERSHED W-11 (MURPHY CR. 68 043004)										
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	P1/Q	5.00 1.067	1.35 .898	.76 .461	2.41 .866	1.23 1.080	2.50 .530	.05 .043	.00 .00	1.07 .00	1.49 .008	1.79 .035	1.05 .076	18.70 5.064		
STA AVG2/P		5.00	1.35	.76	2.41	1.23	2.50	.05	.00	1.07	1.49	1.79	1.05	18.70		
1967	Q	1.067	.898	.461	.866	1.080	.530	.043	.00	.00	.008	.035	.076	5.064		
MEAN P3/																
28 YR.		1.32	1.33	1.32	1.16	1.29	.89	.21	.16	.39	.84	1.20	1.32	11.43		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	1-21	.021	1-21	.024	1-21	.045	1-21	.109	1-21	.209	1-21	.280	1-21	.329	1-21	.704
MAXIMUMS FOR PERIOD OF RECORD																
1967 TO 1967	1-21	.021	1-21	.024	1-21	.045	1-21	.109	1-21	.209	1-21	.280	1-21	.329	1-21	.704
NOTES: Watershed Conditions: Same as that described above under WATERSHED CONDITIONS. For Daily Maximum and Minimum Temperatures see Table for Watershed W-1, p. 68.1-1. 1/ Precipitation values are Thiessen weighted from gages 022040 and 043097. 2/ STA AVG P and Q based on 1967 data only. 3/ Mean P based on 28-yr (1939-66) U.S. Weather Bureau record period at Boise, Idaho; 50 miles N.E. of watershed.																
1967 DAILY PRECIPITATION (inches)						REYNOLDS, IDAHO WATERSHED W-11 (MURPHY CREEK 68 043004)										
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC				
1	0.0	0.0	0.0	0.0	0.0	0.62	0.0	0.0	0.0	0.09	0.0	0.0				
2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.48	0.0	0.0				
3	0.13	0.0	0.0	0.0	0.03	0.0	0.01	0.0	0.0	0.0	0.0	0.02				
4	0.10	0.0	0.0	0.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
5	0.08	0.0	0.0	0.12	0.0	0.45	0.0	0.0	0.0	0.18	0.0	0.42				
6	0.12	0.0	0.0	0.07	0.0	0.45	0.0	0.0	0.0	0.0	0.0	0.0				
7	0.0	0.0	0.0	0.02	0.0	0.10	0.01	0.0	0.0	0.0	0.0	0.0				
8	0.0	0.0	0.0	0.0	0.0	0.16	0.0	0.0	0.07	0.0	0.03	0.0				
9	0.0	0.0	0.08	0.0	0.08	0.0	0.0	0.0	0.0	0.0	0.23	0.0				
10	0.0	0.0	0.06	0.0	0.13	0.0	0.0	0.0	0.0	0.0	0.13	0.0				
11	0.0	0.0	0.09	0.20	0.06	0.0	0.0	0.0	0.77	0.33	0.0	0.0				
12	0.16	0.0	0.09	0.03	0.16	0.13	0.0	0.0	0.0	0.0	0.0	0.06				
13	0.24	0.29	0.03	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
14	0.0	0.23	0.0	0.12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
15	0.0	0.14	0.0	0.07	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
16	0.0	0.35	0.04	0.0	0.0	0.0	0.03	0.0	0.0	0.0	0.0	0.02				
17	0.0	0.16	0.0	0.06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.04				
18	0.0	0.04	0.12	0.01	0.0	0.0	0.0	0.0	0.0	0.0	0.79	0.15				
19	0.0	0.01	0.0	0.18	0.0	0.25	0.0	0.0	0.0	0.0	0.15	0.0				
20	0.53	0.0	0.01	0.15	0.0	0.07	0.0	0.0	0.0	0.0	0.0	0.0				
21	1.83	0.0	0.0	0.08	0.0	0.12	0.0	0.0	0.0	0.11	0.0	0.0				
22	0.17	0.0	0.0	0.08	0.0	0.08	0.0	0.0	0.0	0.0	0.0	0.0				
23	0.0	0.0	0.02	0.63	0.0	0.0	0.0	0.0	0.0	0.0	0.04	0.03				
24	0.14	0.0	0.0	0.01	0.0	0.0	0.0	0.0	0.0	0.0	0.03	0.0				
25	0.0	0.13	0.0	0.12	0.0	0.0	0.0	0.0	0.0	0.02	0.0	0.02				
26	0.31	0.0	0.0	0.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
27	0.06	0.0	0.0	0.04	0.0	0.07	0.0	0.0	0.0	0.06	0.0	0.0				
28	0.01	0.0	0.08	0.13	0.0	0.0	0.0	0.0	0.0	0.22	0.05	0.0				
29	0.05	---	0.11	0.07	0.13	0.0	0.0	0.0	0.17	0.0	0.34	0.0				
30	0.08	---	0.0	0.11	0.02	0.0	0.0	0.0	0.06	0.0	0.0	0.0				
31	0.99	---	0.03	---	0.62	---	0.0	0.0	---	0.0	---	0.02				
TOTAL	5.00	1.35	0.76	2.41	1.23	2.50	0.05	0.0	1.07	1.49	1.79	1.05				
STA AV	5.00	1.35	0.76	2.41	1.23	2.50	0.05	0.0	1.07	1.49	1.79	1.05				
NOTES: PRECIPITATION VALUES ARE THIESSEN WEIGHTED FROM GAGES 022040 AND 043097. STA AV BASED ON 1967 RECORD PERIOD ONLY. FOR MAP OF WATERSHED SEE P. 68.11-6. TOTAL PRECIPITATION FOR YEAR = 18.70 INCHES.																

1967 MEAN DAILY DISCHARGE (cfs)						REYNOLDS, IDAHO		WATERSHED W-11		(MURPHY CR. 68 043004)													
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC											
1	0.083	0.611	0.322	0.387	0.571	0.424	0.056	0.001	0.0	0.0	0.004	0.017											
2	0.083	0.610	0.261	0.334	0.481	0.292	0.045	0.001	0.0	0.0	0.004	0.017											
3	0.083	0.735	0.233	0.337	0.481	0.211	0.040	0.0	0.0	0.001	0.004	0.017											
4	0.067	0.751	0.171	0.308	0.481	0.194	0.040	0.0	0.0	0.001	0.004	0.020											
5	0.046	0.644	0.188	0.320	0.481	0.192	0.038	0.0	0.0	0.002	0.004	0.025											
6	0.038	0.511	0.172	0.308	0.451	0.722	0.035	0.0	0.0	0.001	0.005	0.022											
7	0.038	0.441	0.181	0.293	0.487	0.319	0.034	0.0	0.0	0.001	0.008	0.022											
8	0.038	0.399	0.191	0.280	0.678	0.550	0.034	0.0	0.0	0.001	0.009	0.022											
9	0.038	0.397	0.182	0.267	0.652	0.387	0.030	0.0	0.0	0.001	0.012	0.022											
10	0.038	0.352	0.173	0.256	0.640	0.302	0.029	0.0	0.0	0.001	0.016	0.022											
11	0.036	0.328	0.179	0.280	0.599	0.326	0.024	0.0	0.0	0.001	0.015	0.031											
12	0.033	0.369	0.147	0.234	0.557	0.323	0.020	0.0	0.0	0.002	0.015	0.033											
13	0.171	0.350	0.147	0.211	0.557	0.308	0.017	0.0	0.0	0.001	0.014	0.033											
14	0.243	0.280	0.112	0.221	0.519	0.274	0.016	0.0	0.0	0.001	0.014	0.029											
15	0.171	0.274	0.104	0.246	0.481	0.250	0.014	0.0	0.0	0.001	0.014	0.027											
16	0.111	0.271	0.104	0.293	0.481	0.214	0.014	0.0	0.0	0.002	0.014	0.031											
17	0.075	0.371	0.145	0.309	0.451	0.179	0.021	0.0	0.0	0.003	0.014	0.033											
18	0.065	0.471	0.174	0.267	0.464	0.160	0.013	0.0	0.0	0.003	0.025	0.033											
19	0.063	0.338	0.172	0.291	0.457	0.141	0.008	0.0	0.0	0.003	0.037	0.024											
20	0.099	0.314	0.169	0.326	0.429	0.144	0.008	0.0	0.0	0.003	0.029	0.019											
21	3.013	0.306	0.164	0.334	0.392	0.142	0.007	0.0	0.0	0.007	0.024	0.019											
22	1.556	0.334	0.210	0.352	0.399	0.122	0.006	0.0	0.0	0.013	0.022	0.019											
23	0.627	0.389	0.221	0.465	0.383	0.112	0.006	0.0	0.0	0.011	0.022	0.019											
24	0.406	0.340	0.211	0.851	0.374	0.105	0.004	0.0	0.0	0.008	0.022	0.022											
25	0.337	0.360	0.201	0.570	0.354	0.093	0.003	0.0	0.0	0.008	0.020	0.052											
26	0.337	0.310	0.211	0.568	0.322	0.079	0.006	0.0	0.0	0.008	0.019	0.149											
27	1.288	0.358	0.221	0.519	0.284	0.078	0.003	0.0	0.0	0.007	0.018	0.074											
28	1.616	0.348	0.233	0.544	0.249	0.072	0.0	0.0	0.0	0.012	0.017	0.051											
29	1.424	-----	0.244	0.577	0.260	0.064	0.0	0.0	0.0	0.004	0.017	0.036											
30	0.775	-----	0.222	0.600	0.201	0.054	0.0	0.0	0.0	0.005	0.017	0.030											
31	0.739	-----	0.276	-----	0.280	-----	0.001	0.0	-----	0.005	-----	0.028											
MEAN	0.443	0.412	0.191	0.371	0.448	0.227	0.018	0.0	0.0	0.003	0.015	0.032											
INCHES	1.067	0.898	0.461	0.866	1.080	0.530	0.043	0.0	0.0	0.008	0.035	0.076											
NOTES: TO CONVERT CFS TO IN/DAY, MULTIPLY BY 0.77784.																							
1967 SELECTED RUNOFF EVENT						REYNOLDS, IDAHO WATERSHED W-11 (MURPHY CREEK 68 043004)																	
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF																
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)													
1-20	RG 043097 1/ 14	.000	1-20	Event of January 20-23, 1967						1-19	2400	.064	.0000										
				RG	043097	1-20	1145	.0000	.00					1-20	1934	.093	.0050						
							1247	.0387	.04						2206	.221	.0063						
							1546	.0067	.06						2400	.221	.0076						
							1623	.0305	.14						1-21	0158	.243	.0091					
							2146	.0709	.38							2302	.0394	.43	0246	.412	.0100		
							2400	.0311	.46							0340	.640	.0115					
							0126	.0279	.50							0452	.684	.0141					
							0320	.1000	.69							0555	1.183	.073					
							0413	.0508	.74							0655	1.250	.0212					
							0603	.0465	.49							0800	1.622	.0262					
							1036	.0750	1.23							0922	1.056	.0322					
							1212	.0195	1.26							1200	.939	.0407					
							1357	.1600	1.54							1225	1.118	.0421					
							1636	.0367	1.60							1254	1.705	.0443					
							1706	.1266	1.76							1307	2.576	.0458					
							2011	.0397	1.91							1325	2.922	.0485					
							2236	.0372	2.00							1348	3.845	.0527					
							1-21	1/ 15	.000							1-21	1416	5.118	.0594	1-21	1454	4.770	.0696
																	1546	4.451	.0825				
1613	5.118	.0895																					
1648	6.439	.1005																					
1731	6.644	.1156																					
1810	6.439	.1294																					
1840	5.475	.1391																					
1904	5.660	.1463																					
1-22	1/ 16	.000	1-22	1949	6.238	.1608	1-22	2024	7.970	.1742													
				2118	6.645	.1955																	
				NOTES: TO CONVERT CFS TO IN/HR, MULTIPLY BY .003240. 1/ RAINFALL PRIOR TO 2400 ON 1-19-67.																			

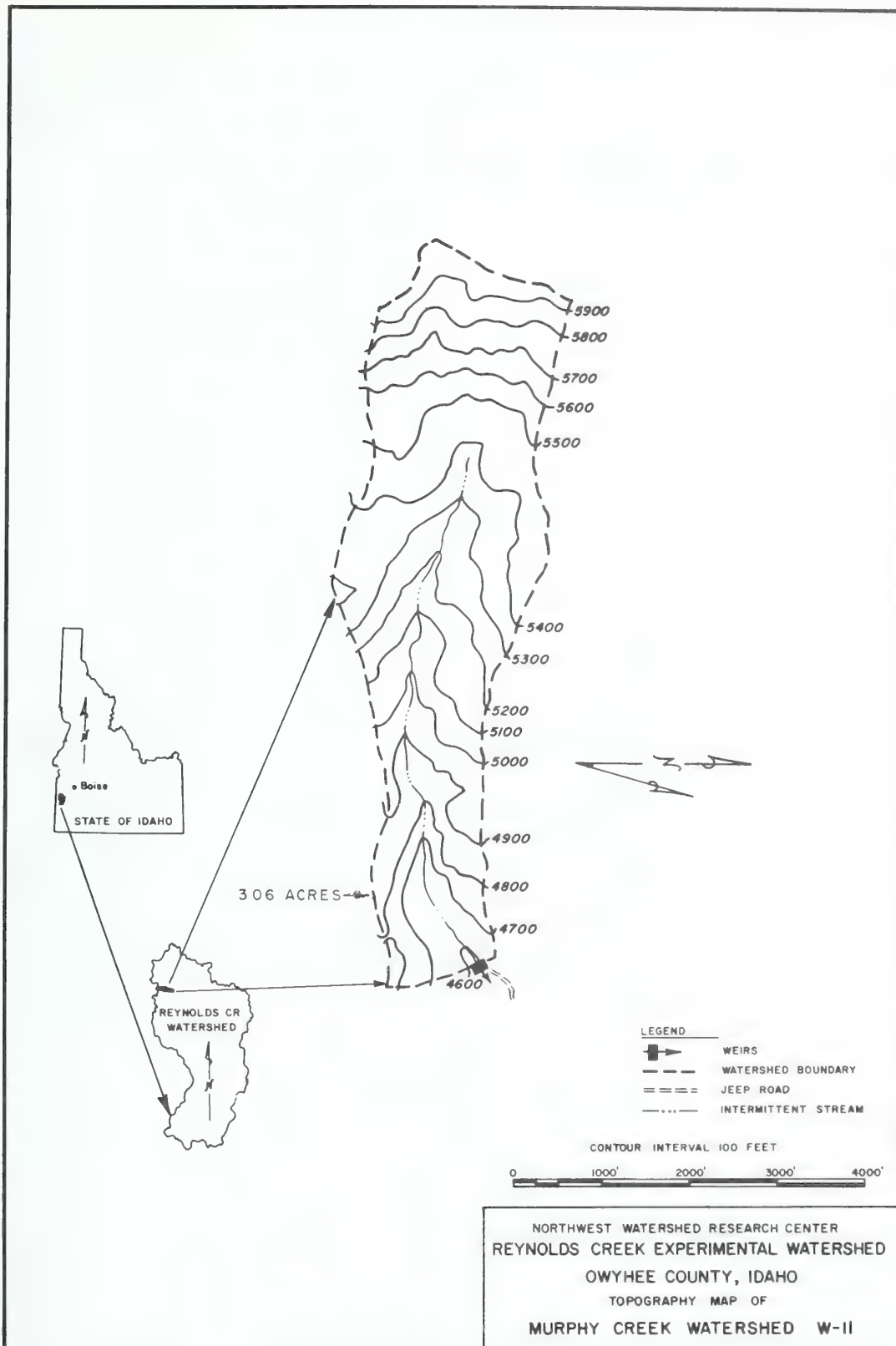
1967 SELECTED RUNOFF EVENT			REYNOLDS, IDAHO WATERSHED W-11 (MURPHY CREEK 68 043004)								
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL inches	RUNOFF inches	DATE MO-DAY	TIME OF DAY	INTENSITY in/hr.	ACC. inches	DATE MO-DAY	TIME OF DAY	RATE cfs	ACC. inches	
Event of January 20-23, 1967—Continued											
							1-21	2204	5.848	.2110	
								2316	4.777	.2317	
								2400	3.845	.2419	
							1-22	0030	3.429	.2478	
								0213	2.576	.2645	
								0343	2.159	.2760	
								0528	1.790	.2872	
								0828	1.543	.3034	
								1112	1.465	.3168	
								1800	1.056	.3445	
							1-23	2400	.831	.3629	
								0128	.684	.3665	
								0930	.597	.3832	

NOTES: TO CONVERT CFS TO IN/HR, MULTIPLY BY .003240.



January 20-23, 1967

REYNOLDS, IDAHO WATERSHED W-11 (68043004)



REYNOLDS, IDAHO WATERSHED W-12 (SUMMIT 68 048077)

LOCATION: Owyhee County, Idaho; 30 miles south of Nampa, Idaho, a west-flowing tributary to Reynolds Creek, tributary to the Snake River.

AREA: 205 acres

<u>SLOPES:</u>	Slope-Percent	5-10	10-20	20-30	30-40	40-50
	Percent of area	12	26	26	31	5

SOILS: Soils developed from granitic colluvium over basaltic bedrock, and residual soils developed from basalt.

Soil (Series)	Per- cent of area	Topsoil			Subsoil		Substratum		
		Avg. depth (in.)	Structure	Perme- ability	Structure	Perme- ability	Avg. depth to(in.)	Perme- ability	Internal drainage
Reywat-Bakeoven stony gravelly loam, rocky loam, stony loam, very stony loam, rocky very stony loam	58.0	-	See characteristics for Reywat and Bakeoven Series						
Lolalita coarse sandy loam	15.0	3	Weak thin platy parting to very weak very fine granular	Moderately rapid	Massive or very weak coarse and medium subangular blocky	Moderat- ely rapid	60	Very slow or none	Rapid
Bakeoven very rocky loam	9.0	3	Weak or moderate very thin and thin platy parting to weak very fine gran- ular	Moderate	Weak very fine and fine sub- angular blocky	Moderate or mod- erately slow	7	Very slow or none	Medium
Larimer stony, gravelly loam, loam	7.0	6	Very thin platy part- ing to very weak very fine granular	Moderate	Weak fine and very fine sub- angular blocky	Moderat- ely slow	60	Very slow or none	Medium
Castlevalley extremely rocky coarse sandy loam	6.0	6	Very weak thin platy parting to very weak very fine granular	Moderate	Weak medium subangular blocky	Moderate	22	Very slow or none	Medium
Newell gravelly loam	5.0	5	Weak thin platy part- ing to moderate very fine granular	Moderate	Moderate or strong very fine and fine sub- angular blocky	Moderate	60	Very slow or none	Medium
Reywat	--	10	Weak thin platy fine granular	Moderately rapid	Weak or moderate subangular blocky	Slow to moderate	18	Very slow or none	Medium

<u>EROSION:</u>	Erosion Class	1	2	3	4	5	+
	Percent of area	0	0	20	80	0	0

<u>LAND CAPABILITY:</u>	Class	I	II	III	IV	V	VI	VII	VIII
	Percent of area	0	0	0	0	0	55	35	10

WATERSHED DESCRIPTION-CONTINUED

GEOLOGY: The Summit Watershed lies on the west-dipping limb of a broad anticline with a granitic intrusion along the upper perimeter. The bedrock is composed of approximately 80% basalt and 20% granite. Soils for the most part are very shallow. Unconfined aquifers occur in the basalt with water tables averaging 20 feet below the surface. Faulting is not a significant hydrologic factor. For geologic map of Reynolds Creek watershed, see Hydrologic Data for Experimental Agricultural Watersheds in the United States, 1963, USDA Misc. Pub. 1164, P. 68.1-10. Source of geologic data: Cenozoic Geology of Reynolds Creek Watershed, Owyhee Co., Idaho, by David H. McIntyre, Idaho Bureau of Mines and Geology Bulletin (In Print).

SURFACE DRAINAGE: Good; length of principal waterway 2660 feet; overall slope 21% a natural watershed with well incised and eroded channels.

CHARACTER OF FLOW: Ephemeral stream.

INSTRUMENTATION: Runoff: Precalibrated 200 c.f.s. capacity drop-box weir; two water level recorders, low-flow rating by volumetric measurement. Precipitation: two Belfort recording rain gages near the watershed boundaries; 24-hour time scales.

WATERSHED CONDITIONS: Sagebrush rangeland with almost exclusive cattle grazing in early spring and late fall. Numerous barren ridges. Vegetation consists largely of big sagebrush, cheatgrass, Sandberg bluegrass, bluebunch wheatgrass, and squirreltail grass.

Vegetative Cover percent	0-25	25-50	51-75	76-100
Percent of area	25	75	0	0

GENERALLY REPRESENTS: Arid sagebrush rangelands receiving less than 10 inches of annual rainfall. Similar to extensive low-elevation rangelands in the lowlands and foothills of southern Idaho, eastern Washington and Oregon and portions of other western states.

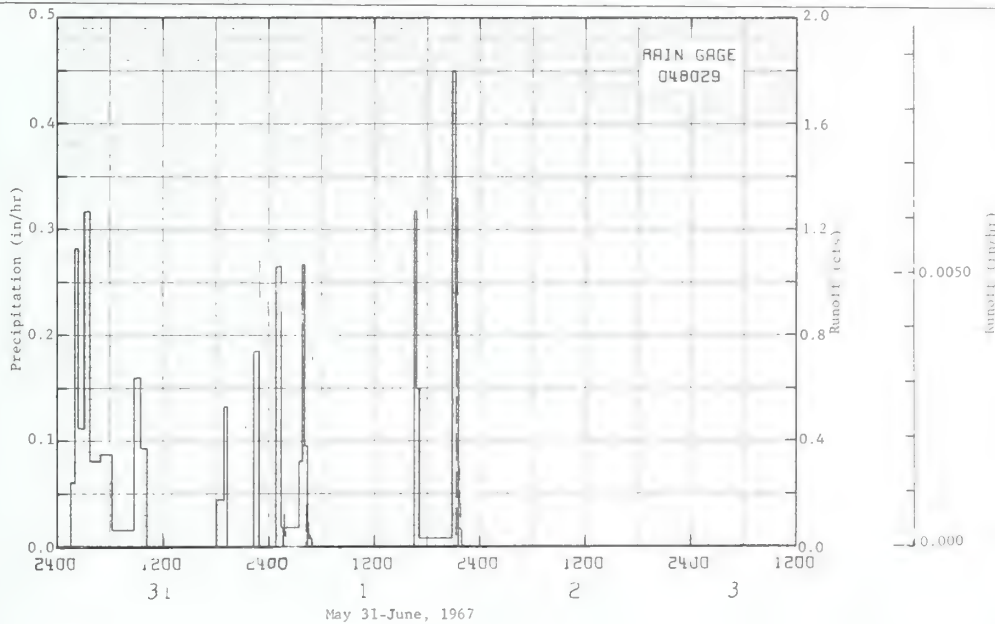
MONTHLY PRECIPITATION AND RUNOFF (inches)						REYNOLDS, IDAHO WATERSHED W-12 (SUMMIT 68 048077)										
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	P 1/	.81	.35	.29	1.20	1.52	2.24	.03	.00	.24	.68	1.19	.48	9.03		
	Q	.00	.00	.00	.00	.00	.002	.00	.00	.00	.00	.00	.00	.002		
STA AVG2/P		.81	.35	.29	1.20	1.52	2.24	.03	.00	.24	.68	1.19	.48	9.03		
1967	Q	.00	.00	.00	.00	.00	.002	.00	.00	.00	.00	.00	.00	.002		
MEAN	P 3/															
28 YR	Q	1.32	1.33	1.32	1.16	1.29	.89	.21	.16	.39	.84	1.20	1.32	11.43		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	6-1	.006	6-1	.001	6-1	.001	6-1	.001	6-1	.001	6-1	.002	6-1	.002	6-1	.002
MAXIMUMS FOR PERIOD OF RECORD																
1967 TO 1967	6-1 1967	.006	6-1 1967	.001	6-1 1967	.001	6-1 1967	.001	6-1 1967	.001	6-1 1967	.002	6-1 1967	.002	6-1 1967	.002

NOTES: Watershed Conditions: Same as that described above under WATERSHED CONDITIONS. For Daily Maximum and Minimum Temperatures see Table for Watershed W-1, p. 68.1-1. 1/ Precipitation values are from gage 048029. 2/ STA AVG P and Q based on 1967 data only. 3/ Mean P based on 28-yr (1939-66) U.S. Weather Bureau record period at Boise, Idaho; 50 miles N.E. of watershed.

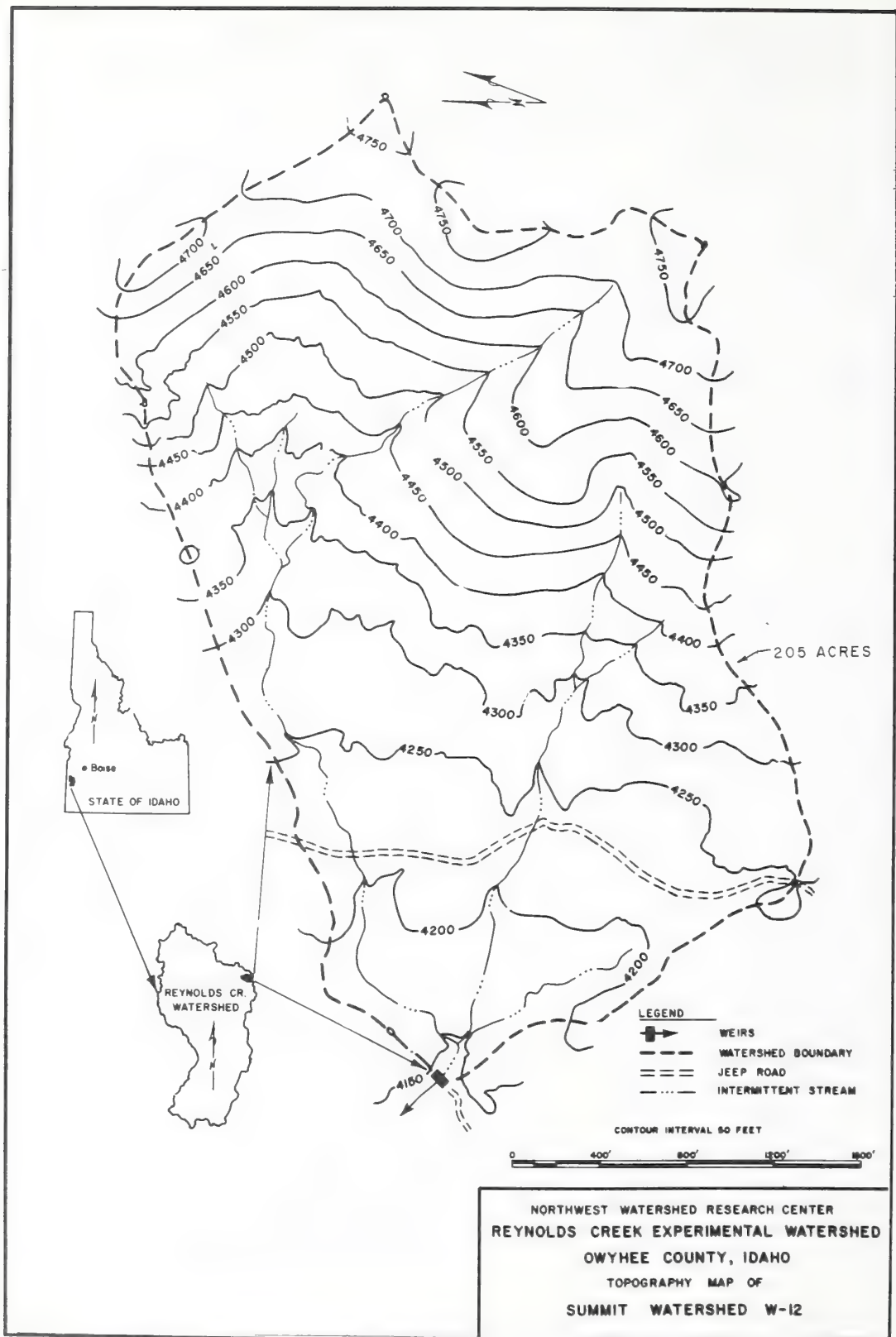
1967 DAILY PRECIPITATION (inches)						REYNOLDS, IDAHO WATERSHED W-12 (SUMMIT 68 048077)						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	0.0	0.0	0.0	0.0	0.0	0.70	0.0	0.0	0.0	0.04	0.0	0.0
2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.22	0.0	0.0
3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	0.0	0.0	0.0	0.06	0.0	0.38	0.0	0.0	0.0	0.04	0.0	0.25
6	0.0	0.0	0.0	0.11	0.0	0.29	0.0	0.0	0.0	0.0	0.0	0.0
7	0.0	0.0	0.0	0.0	0.0	0.0	0.03	0.0	0.0	0.0	0.0	0.06
8	0.0	0.0	0.0	0.0	0.0	0.02	0.0	0.0	0.0	0.0	0.04	0.0
9	0.0	0.0	0.03	0.0	0.04	0.0	0.0	0.0	0.0	0.0	0.23	0.0
10	0.0	0.0	0.02	0.06	0.0	0.0	0.0	0.0	0.0	0.0	0.01	0.0
11	0.0	0.0	0.0	0.19	0.0	0.0	0.0	0.0	0.24	0.11	0.0	0.0
12	0.0	0.0	0.04	0.0	0.03	0.03	0.0	0.0	0.0	0.0	0.0	0.03
13	0.0	0.17	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14	0.0	0.09	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15	0.0	0.07	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16	0.0	0.0	0.05	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17	0.0	0.0	0.0	0.05	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.05
18	0.0	0.0	0.06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.78	0.0
19	0.0	0.0	0.0	0.03	0.0	0.04	0.0	0.0	0.0	0.0	0.08	0.0
20	0.0	0.0	0.0	0.0	0.0	0.04	0.0	0.0	0.0	0.0	0.0	0.03
21	0.37	0.0	0.0	0.04	0.0	0.23	0.0	0.0	0.0	0.05	0.0	0.0
22	0.02	0.0	0.0	0.09	0.0	0.46	0.0	0.0	0.0	0.0	0.0	0.0
23	0.0	0.0	0.0	0.34	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24	0.05	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25	0.0	0.02	0.0	0.05	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.03
26	0.08	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
27	0.0	0.0	0.0	0.0	0.0	0.05	0.0	0.0	0.0	0.0	0.0	0.0
28	0.0	0.0	0.03	0.14	0.0	0.0	0.0	0.0	0.0	0.22	0.05	0.0
29	0.04	---	0.0	0.0	0.30	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30	0.12	---	0.0	0.04	0.12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
31	0.13	---	0.06	---	1.03	---	0.0	0.0	0.0	0.0	---	0.03
TOTAL	0.81	0.35	0.29	1.20	1.52	2.24	0.03	0.0	0.24	0.68	1.19	0.48
STATION	0.81	0.35	0.29	1.20	1.52	2.24	0.03	0.0	0.24	0.68	1.19	0.48
NOTES: PRECIPITATION VALUES FROM GAGE 048029. STA AV BASED ON 1967 RECORD PERIOD ONLY. FOR MAP OF WATERSHED SEE P. 68.12-5. TOTAL PRECIPITATION FOR YEAR = 9.03 INCHES.												
1967 MEAN DAILY DISCHARGE (cfs)						REYNOLDS, IDAHO WATERSHED W-12 (SUMMIT 68 048077)						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	0.0	0.0	0.0	0.0	0.0	0.014	0.0	0.0	0.0	0.0	0.0	0.0
2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
27	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
28	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
29	0.0	---	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30	0.0	---	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
31	0.0	---	0.0	0.0	0.0	---	0.0	0.0	---	0.0	---	0.0
MEAN	0.0	0.0	0.0	0.0	0.0	0.000	0.0	0.0	0.0	0.0	0.0	0.0
INCHES	0.0	0.0	0.0	0.0	0.0	0.002	0.0	0.0	0.0	0.0	0.0	0.0
NOTES: TO CONVERT CFS TO IN/DAY, MULTIPLY BY 0.116106.												

1967 SELECTED RUNOFF EVENT			REYNOLDS, IDAHO WATERSHED W-12 (SUMMIT # 048077)							
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. inches	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. inches
Event of May 31-June 3, 1967										
5-31	RG 048029 .00	.000	5-31	RG 0136	.0000	.30	5- 1	0144	.0000	.000000
				0205	.0620	.33		0145	.0728	.000003
				0222	.2424	.11		0148	.0728	.000018
				0305	.1116	.10		0151	.0369	.000013
				0341	.3166	.32		0156	.0139	.000010
				0455	.0210	.42		0200	.0056	.000003
				0517	.0478	.40		0204	.0006	.000001
				0545	.0142	.54		0224	.0000	.000000
				0530	.1600	.76		0421	.0000	.000000
				1015	.0933	.23		0424	.2003	.000024
				1207	.0000	.23		0428	.0825	.000046
				1900	.0452	.47		0432	.0369	.000019
				1912	.1334	.91		0438	.0214	.000014
				2210	.0000	.91		0440	.0214	.000003
				2252	.1846	1.03		0444	.0161	.000006
			6- 1	0054	.0000	1.03		0448	.0186	.000006
				0122	.2642	1.12		0454	.0102	.000007
				0332	.0173	1.22		0458	.0086	.000003
				0354	.0212	1.25		0506	.0000	.000003
				0403	.2542	1.20		2120	.0000	.000000
				0422	.0540	1.43		2122	.1633	.000013
				1631	.0000	1.33		2123	.4807	.000026
				1642	.3177	1.42		2124	.9388	.000057
				1702	.1422	1.47		2126	1.2495	.000176
				2053	.0030	1.50		2132	.9388	.000529
				2113	.4504	1.65		2138	.4455	.000335
				2137	.2000	1.73		2144	.2003	.000156
								2149	.1176	.000064
								2152	.0641	.000022
								2156	.0247	.000014
								2200	.0120	.000006
								2206	.0056	.000004
								2208	.0006	.000001
								2216	.0000	.000000

NOTES: TO CONVERT CFS TO IN/HR, MULTIPLY BY .004838.



REYNOLDS, IDAHO WATERSHED W-12 (68048077)



MONTHLY PRECIPITATION AND RUNOFF (inches)						REYNOLDS, IDAHO WATERSHED W-13 (REYNOLDS MOUNTAIN 68 166076) AREA—100 ACRES (0.16 SQ.MILES)																		
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL											
1967 P 1/ Q	6.35 .140	1.51 .134	1.53 .181	2.60 .212	2.10 10.998	3.08 8.190	.65 .658	.14 .095	.46 .074	1.86 .106	2.52 .148	2.08 .152	24.88 21.088											
STA AVG P (66-67) Q	4.62 .167	1.54 .136	1.72 .286	1.76 1.667	1.64 7.488	1.96 4.442	.33 .407	.09 .076	.54 .052	1.38 .077	3.33 .132	2.40 .147	21.31 15.077											
MEAN P 2/ 28 YR	1.32	1.33	1.32	1.16	1.29	.89	.21	.16	.39	.84	1.20	1.32	11.43											
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																								
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL																					
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS									
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME								
1967	5-22	.054	5-22	.052	5-22	.103	5-22	.294	5-22	.505	5-22	.815	5-22	1.594	5-17	5.113								
MAXIMUMS FOR PERIOD OF RECORD																								
1966 TO 1967	5-22 1967	.054	5-22 1967	.052	5-22 1967	.103	5-22 1967	.294	5-22 1967	.505	5-22 1967	.815	5-22 1967	1.594	5-17 1967	5.113								
NOTES: Watershed conditions: WATERSHED CONDITIONS same as that described in Hydrologic Data for Experimental Agricultural Watersheds in the United States, 1966, USDA Misc. Pub. 1226, p. 68.13-1. 1/ Precipitation values are from gage 176107. 2/ Mean P based on 28-yr (1939-66) U.S. Weather Bureau record period at Boise, Idaho; 60 miles N.E. of watersheds.																								
1967 DAILY AIR TEMPERATURE (degrees F)						REYNOLDS, IDAHO WATERSHED W-13 (REYNOLDS MTN 68 166076)																		
DAY	JAN		FEB		MAR		APR		MAY		JUNE		JULY		AUG		SEPT		OCT		NOV		DEC	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	27	16	27	22	39	26	31	17	32	17	47	32	73	59	77	55	81	63	49	37	49	27	17	14
2	23	15	29	24	26	16	34	19	37	23	50	32	77	62	75	59	75	60	51	34	33	22	28	16
3	31	24	31	26	22	13	37	26	40	30	52	39	77	61	80	63	75	59	45	31	40	25	30	24
4	34	23	34	29	23	04	36	27	43	30	53	39	73	58	80	62	73	63	55	35	38	28	30	26
5	23	11	31	20	38	15	31	24	42	27	46	37	73	59	77	57	65	57	47	31	43	27	29	12
6	19	10	31	20	38	21	34	24	45	34	47	38	71	57	74	59	65	50	47	33	45	34	24	9
7	22	16	31	19	29	15	36	28	51	39	49	40	70	53	65	47	73	57	55	37	53	38	26	14
8	25	15	32	21	37	21	35	27	53	44	52	41	71	53	75	49	67	56	63	47	54	40	17	10
9	36	19	32	28	37	29	37	27	46	34	50	40	70	52	74	53	71	51	60	49	40	29	20	10
10	40	34	29	23	35	29	39	29	53	42	53	41	77	55	79	60	66	50	64	49	41	31	30	20
11	39	29	33	24	31	19	35	27	29	21	51	39	77	58	77	63	51	36	64	49	49	40	26	9
12	30	23	39	28	24	17	35	26	31	21	48	38	83	67	80	62	44	32	62	38	51	45	9	-1
13	34	30	37	25	25	17	38	29	37	21	52	36	77	65	81	65	52	35	46	31	54	43	1	-4
14	35	30	27	15	23	17	30	20	49	30	55	38	75	61	80	64	59	40	55	32	46	36	7	-3
15	37	23	19	13	39	22	30	19	54	41	59	43	75	59	81	63	62	49	39	28	46	35	25	6
16	25	17	26	17	41	37	29	20	60	45	63	50	72	53	82	67	66	51	58	29	44	33	23	8
17	23	16	32	26	39	33	35	26	64	47	63	52	66	51	83	67	69	51	63	45	51	34	12	2
18	30	17	29	17	33	25	34	21	60	44	69	45	71	56	83	67	61	43	59	48	45	29	17	11
19	36	29	22	15	31	21	25	19	55	42	70	50	71	55	82	64	65	45	48	33	33	25	19	7
20	33	27	25	13	35	27	30	19	55	38	70	51	72	55	81	57	70	51	60	46	32	23	10	7
21	33	25	29	23	39	27	28	17	59	41	68	45	74	57	84	60	77	57	55	39	29	19	17	6
22	25	10	35	24	43	35	31	20	65	46	52	41	77	55	81	67	68	51	46	35	25	19	29	17
23	19	5	41	30	42	23	29	23	66	43	57	39	78	61	83	65	67	49	41	30	25	22	30	27
24	25	13	44	33	31	19	34	21	56	37	63	45	79	61	79	63	71	56	51	30	31	20	30	26
25	23	16	37	24	33	21	33	23	47	33	67	50	79	63	75	60	68	51	49	29	20	15	32	30
26	31	20	31	22	30	20	31	22	55	37	72	57	73	56	78	58	67	47	43	25	21	15	32	30
27	35	31	43	28	37	25	30	22	61	47	60	49	75	54	73	53	74	56	45	39	31	15	33	27
28	37	33	41	35	34	25	26	16	52	43	65	45	81	62	74	57	76	52	44	26	26	17	31	24
29	37	27	--	--	25	15	27	16	47	33	72	45	74	59	77	59	69	49	34	23	23	17	26	22
30	30	24	---	---	23	14	27	19	40	31	73	61	76	61	78	61	51	40	51	30	17	13	23	16
31	29	21	---	---	26	20	---	---	39	29	---	---	75	57	81	61	---	---	56	45	---	---	24	21
AV.	30	21	32	23	33	22	32	22	49	35	58	43	75	59	78	60	67	50	52	36	38	27	23	14
MEAN	25.4		27.5		27.1		27.3		41.5		50.8		66.3		69.3		58.4		43.8		32.5		18.6	
STA AV	30	21	32	23	33	22	38	24	54	36	62	43	74	55	76	55	67	49	51	35	39	24	27	14
NOTES: TEMPERATURE DATA READINGS TAKEN FROM HYGROTHERMOGRAPH RECORD. STA AV BASED ON 1966-67 RECORD PERIOD.																								

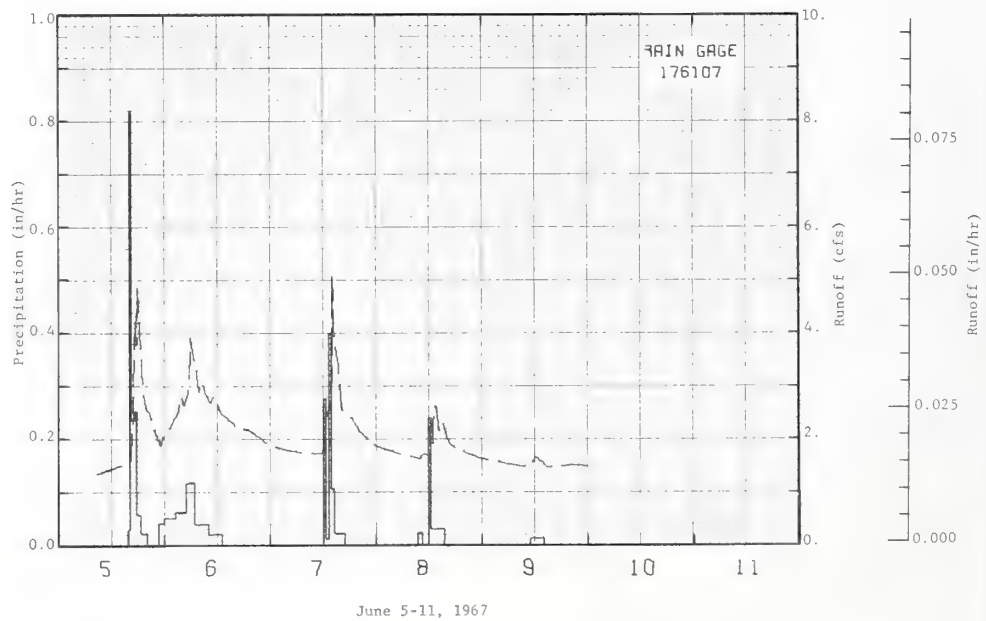
1967 DAILY PRECIPITATION (inches)						REYNOLDS, IDAHO WATERSHED W-13 (REYNOLDS MTN 68 166076)						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	0.02	0.0	0.0	0.0	0.01	0.19	0.0	0.0	0.0	0.0	0.0	0.0
2	0.0	0.0	0.0	0.0	0.0	0.32	0.14	0.0	0.0	0.61	0.0	0.0
3	0.13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.04
4	0.09	0.0	0.0	0.03	0.21	0.0	0.0	0.0	0.0	0.0	0.0	0.02
5	0.08	0.0	0.0	0.21	0.0	0.59	0.0	0.0	0.0	0.14	0.0	0.39
6	0.28	0.0	0.0	0.03	0.0	0.72	0.0	0.0	0.0	0.0	0.0	0.0
7	0.0	0.0	0.0	0.06	0.0	0.45	0.0	0.0	0.0	0.0	0.0	0.44
8	0.0	0.0	0.0	0.0	0.0	0.20	0.0	0.0	0.09	0.0	0.0	0.0
9	0.0	0.0	0.02	0.0	0.06	0.04	0.0	0.0	0.0	0.0	0.26	0.0
10	0.0	0.0	0.03	0.0	0.37	0.02	0.0	0.0	0.0	0.0	0.10	0.0
11	0.0	0.0	0.27	0.16	0.10	0.0	0.0	0.0	0.37	0.16	0.0	0.0
12	0.31	0.0	0.08	0.0	0.06	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	0.21	0.29	0.02	0.0	0.02	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14	0.0	0.20	0.03	0.06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15	0.0	0.32	0.0	0.14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16	0.0	0.46	0.0	0.0	0.0	0.0	0.49	0.0	0.0	0.0	0.0	0.10
17	0.0	0.11	0.0	0.07	0.0	0.0	0.02	0.0	0.0	0.0	0.0	0.05
18	0.0	0.10	0.06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.77	0.57
19	0.03	0.0	0.02	0.13	0.0	0.06	0.0	0.0	0.0	0.0	0.28	0.0
20	1.03	0.0	0.05	0.21	0.0	0.17	0.0	0.0	0.0	0.0	0.05	0.05
21	2.26	0.0	0.02	0.12	0.0	0.28	0.0	0.0	0.0	0.21	0.0	0.10
22	0.10	0.0	0.0	0.24	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23	0.0	0.0	0.05	0.39	0.0	0.0	0.0	0.0	0.0	0.02	0.03	0.04
24	0.05	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.07	0.0
25	0.02	0.03	0.0	0.19	0.0	0.0	0.0	0.0	0.0	0.01	0.0	0.08
26	0.54	0.0	0.0	0.08	0.0	0.0	0.0	0.08	0.0	0.0	0.0	0.06
27	0.17	0.0	0.0	0.13	0.0	0.04	0.0	0.0	0.0	0.02	0.0	0.08
28	0.11	0.0	0.34	0.26	0.05	0.0	0.0	0.06	0.0	0.69	0.09	0.0
29	0.10	---	0.23	0.0	0.05	0.0	0.0	0.0	0.0	0.0	0.87	0.0
30	0.10	---	0.08	0.09	0.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
31	0.72	---	0.23	---	1.07	---	0.0	0.0	---	0.0	---	0.06
TOTAL	6.35	1.51	1.53	2.60	2.10	3.08	0.65	0.14	0.46	1.86	2.52	2.08
ST. 13	4.62	1.54	1.72	1.76	1.64	1.96	0.33	0.09	0.54	1.38	3.33	2.40
NOTES: PRECIPITATION AMOUNTS ARE FROM GAGE 176107. STA AV BASED ON 1966-67 RECORD PERIOD. FOR MAP OF WATERSHED SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1966. P. 13-13. TOTAL PRECIPITATION FOR YEAR = 24.88 INCHES.												
1967 MEAN DAILY DISCHARGE (cfs)						REYNOLDS, IDAHO WATERSHED W-13 (REYNOLDS MTN 68 166076)						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	0.016	0.024	0.019	0.026	0.026	2.286	0.264	0.019	0.010	0.012	0.021	0.016
2	0.016	0.023	0.019	0.026	0.031	1.832	0.249	0.019	0.008	0.019	0.016	0.016
3	0.016	0.023	0.019	0.027	0.048	1.568	0.225	0.017	0.008	0.015	0.019	0.018
4	0.016	0.023	0.017	0.031	0.095	1.541	0.185	0.017	0.008	0.011	0.020	0.019
5	0.016	0.023	0.016	0.031	0.157	1.846	0.160	0.015	0.012	0.014	0.019	0.019
6	0.016	0.023	0.016	0.029	0.289	2.492	0.131	0.012	0.014	0.012	0.020	0.019
7	0.016	0.023	0.017	0.026	0.740	2.122	0.119	0.013	0.010	0.012	0.020	0.019
8	0.016	0.023	0.019	0.027	1.232	1.808	0.113	0.017	0.013	0.011	0.017	0.019
9	0.016	0.023	0.019	0.028	1.706	1.525	0.103	0.016	0.012	0.010	0.022	0.019
10	0.016	0.023	0.017	0.026	0.938	1.453	0.092	0.017	0.009	0.009	0.030	0.019
11	0.016	0.021	0.016	0.026	0.500	1.357	0.083	0.015	0.021	0.010	0.028	0.019
12	0.016	0.019	0.016	0.027	0.366	1.215	0.087	0.014	0.017	0.012	0.026	0.019
13	0.019	0.019	0.016	0.031	0.311	1.158	0.078	0.011	0.015	0.010	0.025	0.019
14	0.019	0.019	0.016	0.033	0.486	1.214	0.074	0.008	0.013	0.011	0.024	0.017
15	0.022	0.019	0.016	0.031	1.071	1.149	0.072	0.010	0.012	0.012	0.023	0.016
16	0.023	0.019	0.026	0.031	1.725	1.097	0.094	0.012	0.010	0.013	0.023	0.017
17	0.023	0.019	0.043	0.031	2.532	0.977	0.080	0.011	0.010	0.015	0.021	0.019
18	0.021	0.019	0.041	0.031	2.413	0.923	0.059	0.009	0.012	0.013	0.024	0.019
19	0.019	0.019	0.034	0.031	2.291	0.865	0.060	0.009	0.011	0.014	0.018	0.019
20	0.019	0.019	0.031	0.031	2.251	0.788	0.053	0.009	0.009	0.016	0.027	0.019
21	0.019	0.019	0.031	0.031	2.508	0.981	0.049	0.011	0.008	0.020	0.026	0.019
22	0.017	0.019	0.032	0.031	3.221	0.690	0.045	0.009	0.009	0.017	0.022	0.019
23	0.016	0.019	0.037	0.031	3.345	0.600	0.041	0.009	0.008	0.014	0.025	0.019
24	0.016	0.019	0.033	0.032	2.920	0.538	0.035	0.008	0.006	0.014	0.025	0.019
25	0.016	0.017	0.031	0.033	2.510	0.476	0.032	0.007	0.006	0.013	0.022	0.021
26	0.016	0.016	0.031	0.031	2.239	0.459	0.032	0.010	0.008	0.013	0.018	0.025
27	0.018	0.016	0.029	0.031	2.358	0.450	0.035	0.020	0.007	0.013	0.008	0.033
28	0.018	0.017	0.026	0.031	2.181	0.362	0.030	0.016	0.006	0.038	0.004	0.038
29	0.033	---	0.026	0.031	2.006	0.332	0.033	0.016	0.007	0.015	0.012	0.031
30	0.032	---	0.026	0.029	1.692	0.304	0.030	0.012	0.011	0.019	0.016	0.026
31	0.029	---	0.026	---	2.017	---	0.023	0.010	---	0.020	---	0.023
MEAN	0.019	0.020	0.025	0.030	1.490	1.147	0.089	0.013	0.010	0.014	0.021	0.021
NOVES	0.140	0.134	0.181	0.212	10.998	8.190	0.658	0.095	0.074	0.106	0.148	0.152
NOTES: TO CONVERT CFS TO IN/DAY, MULTIPLY BY 0.238018.												

1047 SELECTED RUNOFF EVENT			REYNOLDS, IDAHO WATERSHED #13 (REYNOLDS MTN 68 160376)							
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)
Event of June 5-11, 1967										
RG 176107	1/	1/	RG 176107							
6-5	.00	.11	6-5	1545	.0000	.00	6-5	0834	1.344	.0000
				1620	.0272	.02		1410	1.522	.0796
				1637	.8132	.17		1515	1.548	.1115
				1715	.2344	.32		1540	1.664	.1182
				1745	.2514	.45		1705	2.368	.1262
				1847	.0550	.51		1710	3.521	.1291
				2004	.0227	.54		1725	4.245	.1388
				2250	.0000	.54		1740	3.753	.1487
				2400	.0424	.59		1800	4.864	.1629
			6-6	0232	.0513	.72		1834	3.994	.1878
				0400	.0444	.49		1900	3.248	.2035
				0701	.1100	1.12		1934	2.744	.2205
				1002	.0337	1.24		1955	2.552	.2296
				1315	.0217	1.31		2045	2.450	.2521
			6-7	1212	.0000	1.31		2125	2.250	.2562
				1238	.2767	1.43		2225	2.079	.2877
				1325	.0127	1.44		2315	1.865	.3040
				1352	.4002	1.52		2400	2.079	.3187
				1443	.1054	1.71	6-8	0134	2.250	.3523
				1703	.0214	1.76		0215	2.368	.3680
			6-8	0542	.0000	1.76		0304	2.490	.3876
				1030	.0244	1.76		0355	2.810	.4100
				1204	.0000	1.76		0440	2.615	.4302
				1224	.2324	1.76		0534	2.877	.4547
				1404	.0300	1.51		0545	3.143	.4602
			6-9	1538	.0319	1.96		0600	3.913	.4689
				1105	.0000	1.34		0649	3.521	.4990
				1403	.0134	2.00		0730	3.225	.5219
								0800	2.877	.5370
								0840	3.093	.5567
								0910	2.877	.5759
								1040	2.679	.6131
								1130	2.810	.6358
								1304	2.490	.6770
								1510	2.250	.7498
								1834	2.135	.8238
								2400	1.865	.9117
							6-7	0445	1.762	.9972
								0349	1.712	1.0673
								1204	1.712	1.1225
								1240	2.079	1.1338
								1249	2.368	1.1371
								1300	2.490	1.1415
								1345	2.615	1.1605
								1404	3.225	1.1696
								1410	3.833	1.1731
								1415	5.050	1.1768
								1430	4.077	1.1881
								1455	3.753	1.2043
								1530	3.371	1.2249
								1604	2.810	1.2423
								1625	2.552	1.2516
								1719	2.490	1.2741
								1810	2.424	1.2948
								2025	2.135	1.3458
								2400	1.865	1.4168
							6-9	0500	1.712	1.5055
								0955	1.815	1.5867
								1045	1.712	1.6005
								1225	1.664	1.6284
								1300	1.917	1.6387
								1304	2.368	1.6401
								1334	2.815	1.6525
								1419	2.135	1.6702
								1519	2.308	1.6922

NOTES: TO CONVERT CFS TO IN/HR, MULTIPLY BY .009917. 1/ RUNOFF PRIOR TO 0834 ON 6-5-67.

1-47 SELECTED RUNOFF EVENTS			REYNOLDS, IDAHO WATERSHED W-13 (REYNOLDS MTN 68 166076)							
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)
			Event of June 5-11, 1967—Continued							
							6-8	1410	2.024	1.7105
								1710	1.865	1.7327
								2045	1.712	1.7936
								2400	1.615	1.8472
							6-9	0555	1.522	1.9393
								0710	1.476	1.9976
								1110	1.476	2.0169
								1215	1.664	2.0338
								1440	1.476	2.0714
								1845	1.522	2.1470
								2400	1.476	2.2102

NOTES: TO CONVERT CFS TO IN/HR, MULTIPLY BY .009917.



REYNOLDS, IDAHO WATERSHED W-13 (68166076)

REYNOLDS, IDAHO WATERSHED W-14 (LOWER SHEEP CREEK 68 11'000)

LOCATION: Owyhee County, Idaho; 40 miles south of Nampa, Idaho; a tributary to Reynolds Creek, a tributary to the Snake River.

AREA: 33 acres

<u>SLOPES:</u>	Slope-Percent	5-10	10-20	20-30
	Percent of area	15	83	2

SOILS: Residual, soils developed from basalt and rhyolitic volcanics.

Soil (Series)	Per- cent of area	Topsoil			Subsoil		Substratum		
		Avg. depth (in.)	Structure	Perme- ability	Structure	Perme- ability	Avg. depth (in.)	Perme- ability	Internal drainage
Searla gravelly loam extremely stony gravelly loam	100.0	3	Weak very thin platy parting to weak very fine gran- ular	Moderate	Moderate to weak fine and very fine sub- angular blocky parting to weak very fine and fine gran- ular	Slow	60	Very slow or none	Slow

<u>EROSION:</u>	Erosion Class	1	2	3	4	5	+
	Percent of area	0	100	0	0	0	0

<u>LAND CAPABILITY:</u>	Class	I	II	III	IV	V	VI	VII	VIII
	Percent of area	0	0	0	0	0	100	0	0

GEOLOGY: The Lower Sheep Creek Watershed (W-14) occurs on a gently dipping rhyolite flow. No aquifers occur in the rhyolite, but ground water may occur beneath the rhyolite in the underlying basalt at unknown depth. For geologic map of Reynolds Creek watershed, see Hydrologic Data for Experimental Agricultural Watersheds in the United States, 1963, USDA Misc. Pub. 1164, P. 68.1-10. Source of geologic data: Cenozoic Geology of Reynolds Creek Watershed, Owyhee Co., Idaho, by David H. McIntyre, Idaho Bureau of Mines and Geology Bulletin (In Print).

SURFACE DRAINAGE: Good; length of principal waterway 2100 feet; Overall slope 10-1/2%; a natural watershed with moderately defined channels and some vegetative growth in the stream channels.

CHARACTER OF FLOW: Ephemeral stream.

INSTRUMENTATION: Runoff: Precalibrated 40 c.f.s. capacity drop-box weir; FW-1 water level recorder; low-flow rating by volumetric measurement. Precipitation: One Belfort recording rain gage near the watershed boundary, 24-hour time scale.

WATERSHED CONDITIONS: The watershed is entirely sagebrush rangeland used almost exclusively for cattle grazing. Vegetation consists of bluebunch wheat grass, Sandberg bluegrass, cheatgrass, yarrow, and little sagebrush.

Vegetative Cover percentage	0-25	26-50	51-75	76-100
Percent of area	90	10	0	0

GENERALLY REPRESENTS: Small sagebrush rangeland watersheds of the Northwest with low water yield, less than 20 inches of annual precipitation and mild relief on rhyolite.

MONTHLY PRECIPITATION AND RUNOFF (inches)						REYNOLDS, IDAHO WATERSHED W-14 (SHEEP CREEK 68 117066)							
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1967 P ₁ /Q	2.79 .108	.66 .011	.80 .132	1.65 .015	1.49 .00	2.11 .007	.16 .00	.00 .00	.62 .00	1.33 .00	1.59 .00	1.54 .001	14.74 .275
STA AVG2/P	2.79	.66	.80	1.65	1.49	2.11	.16	.00	.62	1.33	1.59	1.54	14.74
1967 Q	.108	.011	.132	.015	.00	.007	.00	.00	.00	.00	.00	.001	.275
MEAN P ₂ /Q	2.79	.66	.80	1.65	1.49	2.11	.16	.00	.62	1.33	1.59	1.54	14.74
28 YR	1.32	1.33	1.32	1.16	1.29	.89	.21	.16	.39	.84	1.20	1.32	11.43

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	1-21	.042	1-21	.029	1-21	.048	1-21	.062	1-21	.068	1-21	.070	1-21	.072	3-16	.090
MAXIMUMS FOR PERIOD OF RECORD																
1967 TO 19 67	1-21 1967	.042	1-21 1967	.029	1-21 1967	.048	1-21 1967	.062	1-21 1967	.068	1-21 1967	.070	1-21 1967	.072	3-16 1967	.090

NOTES: Watershed Conditions: Same as that described above under WATERSHED CONDITIONS. 1/ Precipitation values are from gage 137008. 2/ STA AVG P and Q based on 1967 data only. 3/ Mean P based on 28-yr (1939-66) U.S. Weather Bureau record period at Boise, Idaho; 50 miles N.E. of watershed.

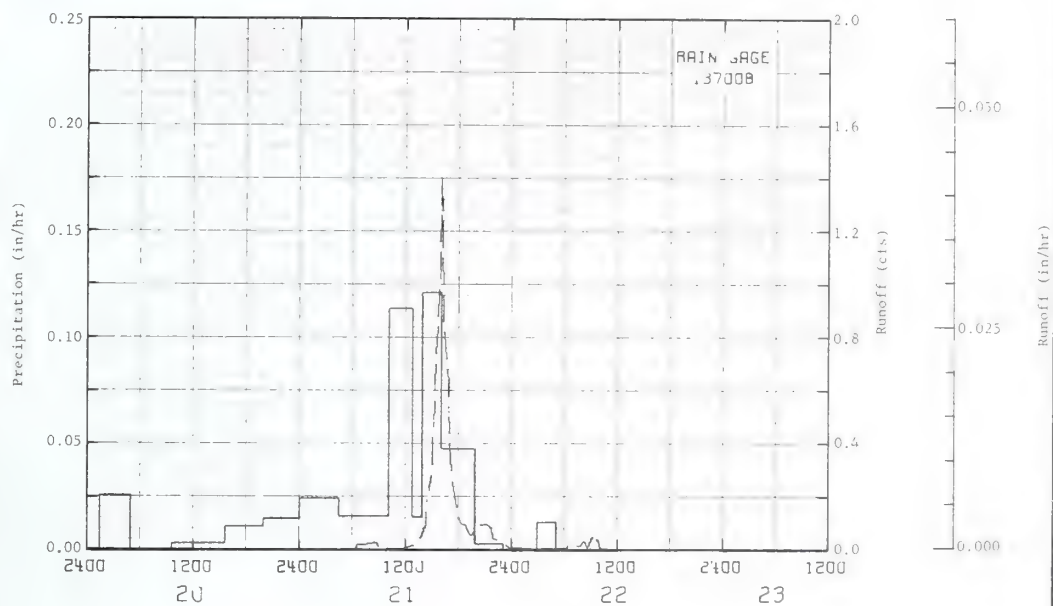
1967 DAILY AIR TEMPERATURE (degrees F)											REYNOLDS, IDAHO WATERSHED W-14 (SHEEP CREEK 68 117066)													
DAY	JAN		FEB		MAR		APR		MAY		JUNE		JULY		AUG		SEPT		OCT		NOV		DEC	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	36	27	33	24	45	31	35	20	41	23	54	42	84	60	82	59	90	69	59	42	55	31	38	19
2	28	13	37	27	31	21	43	24	49	29	60	43	89	68	85	62	85	66	59	42	39	25	39	22
3	37	23	41	32	30	17	49	27	54	38	62	43	90	63	89	67	81	62	55	38	41	25	40	25
4	41	35	44	36	31	15	47	34	52	35	63	44	81	63	90	64	79	66	59	42	38	31	41	33
5	37	16	36	25	41	21	37	29	54	34	53	45	84	64	83	61	74	63	52	38	47	32	35	19
6	24	17	41	25	49	28	43	29	62	37	56	45	78	59	83	63	73	58	53	35	48	32	25	17
7	26	21	36	23	39	22	42	31	68	46	58	47	78	58	73	51	79	61	60	36	54	41	29	20
8	33	22	40	25	47	29	46	31	72	48	59	47	82	63	79	53	72	59	66	37	63	44	25	16
9	33	25	41	34	46	33	47	34	57	40	54	37	75	54	83	59	78	60	65	35	46	34	33	18
10	42	23	37	30	43	33	46	34	48	33	55	40	81	59	88	62	75	59	66	39	51	37	44	29
11	40	31	43	27	40	22	39	31	42	29	58	41	87	64	86	66	58	40	64	37	55	45	40	16
12	37	27	48	32	31	21	48	31	40	29	55	38	94	71	88	67	53	37	65	38	57	47	16	5
13	40	27	43	23	33	23	51	34	50	31	56	40	89	76	94	67	59	39	67	32	58	48	13	3
14	43	25	23	17	33	25	35	24	60	37	62	43	84	65	90	68	64	45	52	39	56	43	20	4
15	45	28	25	18	45	25	34	25	72	49	66	45	85	63	83	69	69	50	58	36	50	39	26	8
16	31	24	30	21	48	36	37	22	78	53	73	53	81	60	93	73	70	50	63	47	50	37	29	7
17	31	23	39	31	50	36	40	31	70	45	75	57	75	57	94	74	76	56	64	50	43	32	20	16
18	30	21	37	20	41	29	39	27	79	47	80	57	83	61	92	72	72	51	69	50	53	32	25	15
19	42	36	39	17	40	26	27	22	74	52	79	62	78	57	92	70	76	56	53	36	37	31	30	7
20	39	31	35	18	47	32	36	24	80	56	75	56	79	57	91	71	83	61	65	43	40	32	26	6
21	38	30	37	28	49	34	34	19	83	58	67	50	80	58	83	66	73	55	61	45	35	27	26	14
22	30	15	45	29	55	41	35	23	75	54	59	46	87	60	85	62	74	54	57	42	38	27	41	25
23	20	15	42	32	49	29	34	26	66	41	64	43	90	68	90	70	78	58	49	32	37	27	40	33
24	29	17	48	33	39	23	42	25	57	35	71	49	90	68	84	63	70	55	57	33	43	32	41	33
25	31	23	44	30	44	25	40	29	50	33	75	54	88	64	81	52	77	52	57	30	32	24	41	39
26	37	25	41	26	40	27	38	27	47	31	84	60	84	62	80	51	74	51	46	26	29	20	44	39
27	43	37	47	32	48	30	43	29	52	36	67	57	84	56	82	56	79	59	53	37	31	20	47	37
28	45	39	53	40	43	30	43	18	60	38	74	49	92	67	81	50	84	61	52	32	31	24	48	29
29	42	33	--	--	30	19	42	17	55	39	81	59	82	67	87	66	80	54	43	27	33	25	35	25
30	36	30	--	--	33	10	31	23	57	36	83	64	85	67	86	65	60	45	55	39	29	21	32	23
31	34	25	--	--	32	22	--	--	49	30	--	--	85	64	90	67	--	--	65	51	--	--	35	26
AV.	36	26	39	27	41	27	40	27	60	39	66	49	84	63	86	63	74	55	58	38	44	32	33	20
MEAN	31.1	1	33.2	23.8	33.8	20.5	37.3	23.4	40.5	27.3	57.3	43.4	73.4	54.7	74.7	64.5	58.3	48.3	38.1	26.6	26.6	26.6	26.6	26.6
STA AV	36	26	39	27	41	27	40	27	60	39	66	49	84	63	86	63	74	55	58	38	44	32	33	20

NOTES: TEMPERATURE DATA READINGS TAKEN FROM HYGROTHERMOPHGRAPH RECORD. STA AV BASED ONLY ON 1967 DATA.

1967 DAILY PRECIPITATION (inches)						REYNOLDS, IDAHO WATERSHED W-14 (SHEEP CREEK 68 117066)						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	0.0	0.0	0.0	0.0	0.0	0.51	0.0	0.0	0.0	0.03	0.0	0.0
2	0.02	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.60	0.0	0.0
3	0.04	0.0	0.0	0.0	0.0	0.0	0.03	0.0	0.0	0.0	0.0	0.0
4	0.02	0.0	0.0	0.04	0.11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	0.03	0.0	0.0	0.05	0.0	0.20	0.0	0.0	0.0	0.06	0.0	0.26
6	0.05	0.0	0.0	0.07	0.0	0.80	0.0	0.0	0.0	0.0	0.0	0.0
7	0.0	0.0	0.0	0.04	0.0	0.18	0.0	0.0	0.0	0.0	0.0	0.12
8	0.0	0.0	0.0	0.0	0.02	0.0	0.0	0.0	0.20	0.0	0.0	0.0
9	0.0	0.0	0.03	0.0	0.14	0.0	0.0	0.0	0.0	0.0	0.15	0.0
10	0.0	0.0	0.01	0.04	0.04	0.0	0.0	0.0	0.0	0.0	0.09	0.0
11	0.0	0.0	0.11	0.35	0.0	0.0	0.0	0.0	0.36	0.09	0.0	0.0
12	0.09	0.0	0.05	0.04	0.0	0.06	0.0	0.0	0.0	0.0	0.0	0.02
13	0.04	0.26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14	0.0	0.13	0.0	0.02	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15	0.0	0.06	0.0	0.13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16	0.0	0.10	0.06	0.0	0.0	0.0	0.08	0.0	0.0	0.0	0.0	0.0
17	0.0	0.03	0.0	0.05	0.0	0.0	0.05	0.0	0.0	0.0	0.0	0.06
18	0.0	0.05	0.06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.80	0.86
19	0.0	0.0	0.0	0.09	0.0	0.0	0.0	0.0	0.0	0.0	0.25	0.0
20	0.22	0.0	0.03	0.11	0.0	0.10	0.0	0.0	0.0	0.0	0.0	0.05
21	1.00	0.0	0.0	0.02	0.0	0.23	0.0	0.0	0.0	0.10	0.0	0.12
22	0.03	0.0	0.0	0.09	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23	0.0	0.0	0.03	0.21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24	0.17	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.05
25	0.0	0.03	0.0	0.08	0.0	0.0	0.0	0.0	0.0	0.02	0.0	0.0
26	0.10	0.0	0.0	0.05	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
27	0.06	0.0	0.0	0.03	0.0	0.03	0.0	0.0	0.0	0.07	0.0	0.0
28	0.0	0.0	0.07	0.12	0.03	0.0	0.0	0.0	0.0	0.36	0.06	0.0
29	0.25	---	0.01	0.0	0.03	0.0	0.0	0.0	0.03	0.0	0.24	0.0
30	0.23	-----	0.08	0.02	0.22	0.0	0.0	0.0	0.03	0.0	0.0	0.0
31	0.44	-----	0.26	-----	0.90	-----	0.0	0.0	-----	0.0	-----	0.0
TOTAL	2.79	0.66	0.80	1.65	1.49	2.11	0.16	0.0	0.62	1.33	1.59	1.54
STAAV	2.79	0.66	0.80	1.65	1.49	2.11	0.16	0.0	0.62	1.33	1.59	1.54
NOTES: PRECIPITATION VALUES ARE FROM GAGE 137008. STA AV BASED ON 1967 RECORD PERIOD ONLY. FOR MAP OF WATER SHED SEE P. 68.14-6. TOTAL PRECIPITATION FOR YEAR = 14.74 INCHES.												
1967 MEAN DAILY DISCHARGE (cfs)						REYNOLDS, IDAHO WATERSHED W-14 (SHEEP CREEK 68 117066)						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	0.0	0.001	0.005	0.002	0.001	0.001	0.0	0.0	0.0	0.0	0.0	0.0
2	0.0	0.0	0.004	0.003	0.001	0.001	0.0	0.0	0.0	0.0	0.0	0.0
3	0.0	0.0	0.002	0.002	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	0.0	0.001	0.001	0.001	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	0.0	0.001	0.001	0.002	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	0.0	0.001	0.001	0.002	0.0	0.002	0.0	0.0	0.0	0.0	0.0	0.0
7	0.0	0.0	0.001	0.002	0.0	0.004	0.0	0.0	0.0	0.0	0.0	0.0
8	0.0	0.0	0.002	0.001	0.0	0.005	0.0	0.0	0.0	0.0	0.0	0.0
9	0.0	0.0	0.003	0.0	0.0	0.001	0.0	0.0	0.0	0.0	0.0	0.0
10	0.0	0.0	0.005	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	0.0	0.0	0.004	0.001	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	0.0	0.001	0.003	0.001	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	0.0	0.004	0.002	0.001	0.0	0.001	0.0	0.0	0.0	0.0	0.0	0.0
14	0.0	0.002	0.002	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15	0.0	0.0	0.002	0.001	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16	0.0	0.001	0.045	0.001	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17	0.0	0.001	0.032	0.001	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18	0.0	0.001	0.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19	0.0	0.001	0.008	0.001	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20	0.0	0.001	0.011	0.001	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21	0.097	0.001	0.012	0.001	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22	0.004	0.001	0.012	0.001	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23	0.001	0.001	0.008	0.002	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24	0.001	0.001	0.005	0.001	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25	0.001	0.001	0.003	0.001	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26	0.002	0.001	0.003	0.001	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.001
27	0.037	0.001	0.003	0.001	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.002
28	0.005	0.004	0.003	0.002	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
29	0.006	-----	0.002	0.002	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30	0.001	-----	0.001	0.002	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
31	0.001	-----	0.0	-----	0.0	-----	0.0	0.0	-----	0.0	-----	0.0
MEAN	0.005	0.001	0.006	0.001	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
INCHES	0.108	0.011	0.132	0.015	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.001
NOTES: TO CONVERT CFS TO IN/DAY, MULTIPLY BY 0.721266.												

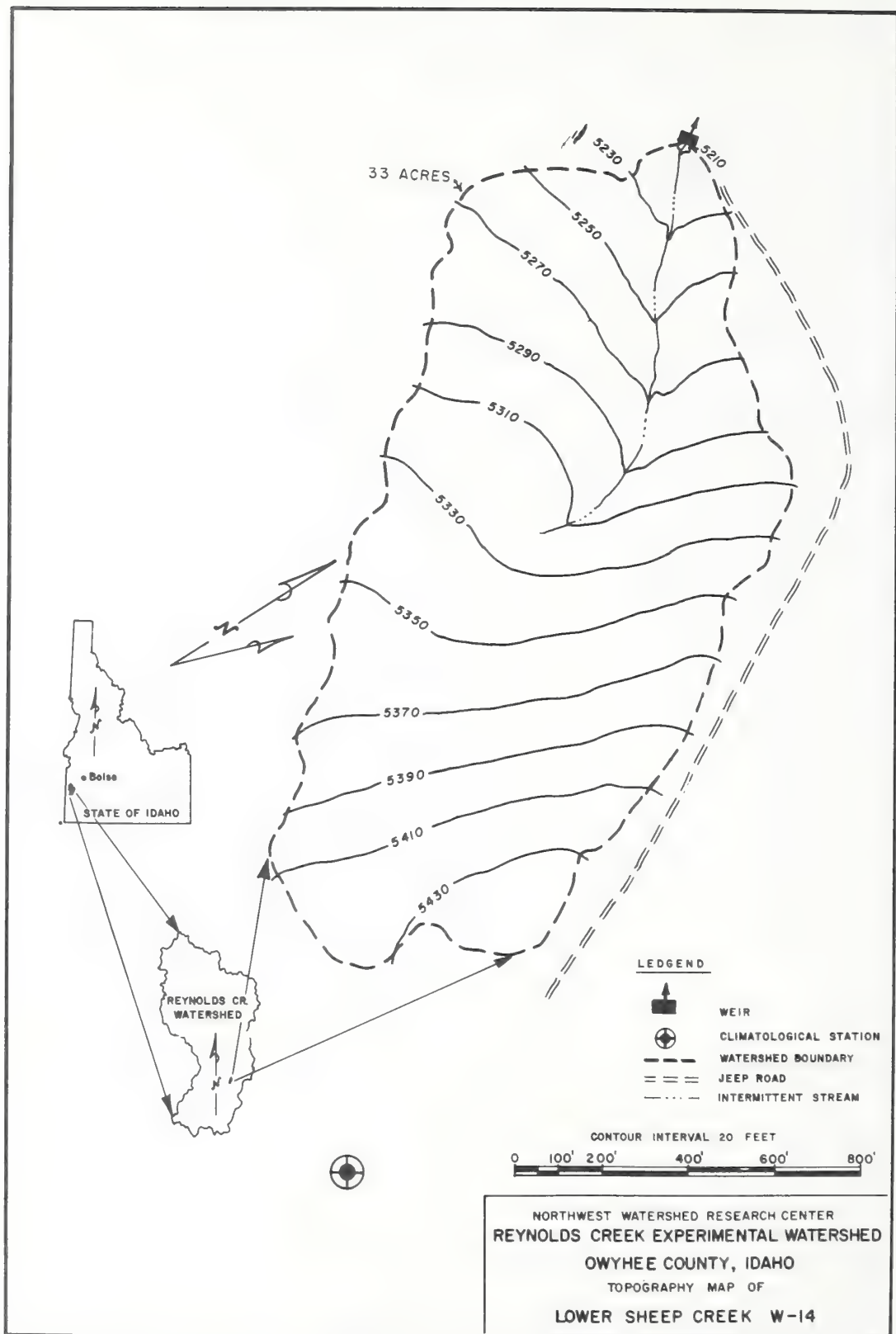
1967 SELECTED RUNOFF EVENT			REYNOLDS, IDAHO WATERSHED W-14 (SHEEP CREEK 68 117066)							
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL inches	RUNOFF inches	DATE MO-DAY	TIME OF DAY	INTENSITY in/hr	ACC. inches	DATE MO-DAY	TIME OF DAY	RATE cfs	ACC. inches
Event of January 20-22, 1967										
1-20	RG 137008 .00	.000	1-20	RG 0125	.0000	.00	1-21	0630	.008	.0000
				0453	.0259	.09		0840	.014	.0007
				0938	.0000	.09		0855	.006	.0008
				1538	.0033	.11		0930	.004	.0009
				1558	.0115	.16		1115	.003	.0010
			1-21	2400	.0149	.22		1245	.008	.0013
				0428	.0246	.33		1330	.014	.0015
				1008	.0158	.42		1355	.034	.0018
				1241	.1137	.71		1415	.099	.0025
				1351	.0154	.77		1425	.187	.0032
			1-22	1600	.1209	1.33		1455	.287	.0068
				1648	.0473	1.21		1515	.630	.0114
				2300	.0931	1.22		1545	.968	.0234
				0251	.0000	1.22		1600	.409	.0323
				0505	.0133	1.25		1615	.945	.0408
								1645	.630	.0518
								1700	.348	.0555
								1730	.209	.0597
								1755	.129	.0618
								1819	.060	.0630
								1840	.060	.0636
								1919	.027	.0644
								2019	.060	.0657
								2100	.099	.0674
								2140	.050	.0689
							1-22	2149	.022	.0690
								2304	.010	.0696
								2340	.005	.0698
								2400	.005	.0698
								0219	.004	.0701
								0404	.003	.0703
								0530	.005	.0705
								0610	.005	.0706
								0625	.008	.0706
								0710	.010	.0708
								0734	.006	.0709
								0810	.014	.0711
								0840	.006	.0713
								0910	.022	.0715
								0930	.010	.0716
								0949	.017	.0718
								1004	.004	.0718
								1040	.004	.0719
								1049	.001	.0719
								1210	.001	.0719
								1604	.000	.0720

NOTES: TO CONVERT CFS TO IN/HR, MULTIPLY BY .030053.



January 20-22, 1967

REYNOLDS, IDAHO WATERSHED W-14 (68117066)



MONTHLY PRECIPITATION AND RUNOFF (inches)						CHICKASHA, OKLAHOMA AREA — 2,339,800 ACRES		WATERSHED 100 AT ANADARKO (3,656 SQ. MILES)					
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1967 P ₁ / Q	.022	.019	.017	.097	.016	.026	.025	.010	.035	.012	.012	.015	.306
STA AVG P ₁ / Q ₂	.044	.048	.053	.068	.067	.147	.031	.037	.134	.110	.113	.055	.907
MEAN P ₃ / 67 YR	1.16	1.22	1.99	3.35	4.99	3.78	2.52	2.69	3.31	2.88	1.74	1.39	31.02

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	4-13	.0010	4-13	.0010	4-13	.0021	4-13	.006	4-13	.012	4-13	.022	4-12	.040	4-12	.068

MAXIMUMS FOR PERIOD OF RECORD 4/															
19 61 TO 9-23 1965	.0044	9-23 1965	.0044	9-23 1965	.0088	9-23 1965	.026	9-23 1965	.052	9-23 1965	.100	9-23 1965	.188	9-21 1965	.384

Notes: Watershed conditions not applicable. For maps, see Hydrologic Data for Experimental Agricultural Watersheds in the United States, 1965, P. 69.7-21 and 1962, P. 69.7-9. 1/ Since this is the inflow station to a study reach, these data are not applicable. 2/ Runoff records began Oct. 1961. 3/ Mean P based on 67-yr (1901-67) U.S. Weather Bureau record period at Chickasha, Okla.; missing months estimated. 4/ Period of record began Oct. 1961.

MISCELLANEOUS DATA													
RUNOFF PEAK DATA: YEAR (1967): Maximum — Apr. 14, 2,470 cfs (12.91 ft). Minimum — Aug. 17, 1.6 cfs (6.36 ft). PERIOD OF RECORD: Maximum — Sept. 23, 1965, 11,000 cfs (24.20 ft). Minimum — no flow. Period of record began Oct. 1, 1961. PEAK DISCHARGES: (Above base of 3,000 cfs) — none. DAILY TEMPERATURE: See page 69.7-3.													

1967 MEAN DAILY DISCHARGE (cfs)						CHICKASHA, OKLAHOMA WATERSHED 100 AT ANADARKO							
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	
1	78	94	56	58	56	44	97	18	28	110	35	44	
2	78	90	55	43	70	36	80	15	25	70	35	44	
3	76	84	53	35	65	30	95	14	23	58	36	43	
4	72	68	53	50	63	34	236	14	25	56	44	41	
5	74	55	56	53	63	45	401	14	119	31	33	41	
6	72	53	59	48	70	44	279	12	56	27	35	43	
7	70	50	55	50	78	43	171	11	39	39	36	40	
8	70	56	53	53	101	41	123	10	29	29	36	40	
9	66	68	56	48	115	40	88	9.0	28	23	40	43	
10	70	68	55	63	80	39	69	7.0	41	20	41	43	
11	70	68	53	45	56	37	53	6.0	45	36	41	41	
12	68	68	51	1090	61	41	44	4.8	40	45	40	41	
13	68	68	50	1930	58	43	39	4.8	26	44	41	44	
14	70	70	47	1700	41	39	32	4.8	19	41	43	44	
15	72	70	45	527	32	196	31	4.0	17	39	43	45	
16	68	68	45	410	26	128	30	3.4	217	37	43	47	
17	63	70	43	350	21	88	41	1.6	404	36	41	50	
18	65	68	37	305	30	74	47	2.0	112	33	43	55	
19	61	63	39	288	37	72	50	27	51	31	41	53	
20	59	61	47	292	40	148	36	69	36	31	40	53	
21	66	63	45	309	39	93	36	79	34	31	40	55	
22	65	63	45	360	40	56	47	132	261	30	40	56	
23	66	63	48	447	40	30	45	139	197	30	41	53	
24	63	61	56	389	37	23	45	106	219	29	41	51	
25	70	61	51	218	35	21	51	57	157	22	41	51	
26	74	61	58	103	36	20	45	43	111	27	39	51	
27	72	59	86	84	37	82	37	41	146	28	40	51	
28	72	56	78	74	37	512	35	35	324	28	40	51	
29	70	66	66	66	43	325	35	31	350	28	41	50	
30	86	56	59	59	50	147	27	25	225	30	44	51	
31	108	55	55	50	50	25	28	28	36	36	40	51	
MEAN	71	66	53	318	52	86	80	31	113	37	40	47	
INCHES	.022	.019	.017	.097	.016	.026	.025	.010	.035	.012	.012	.015	

NOTES: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .00001017. TO CONVERT DISCHARGE IN INCHES TO AC-FT, MULTIPLY BY 195,000. YEARLY MEAN DISCHARGE, 82 CFS. YEARLY DISCHARGE, .306 INCHES. MAXIMUM AND MINIMUM FLOWS EACH MONTH UNDERLINED. * DISCHARGE MEASUREMENTS.

1967			SELECTED RUNOFF EVENT				CHICKASHA, OKLAHOMA				WATERSHED 100 AT ANADARKO			
ANTECEDENT CONDITIONS			RAINFALL 1/				RUNOFF							
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)				
			Event of April 12-18, 1967											
Watershed conditions: Not applicable.							4-12	0200	42.0					
							0218	52.0						
							0236	57.9						
							0254	89.1						
							0312	94.3						
							0330	83.0						
							0348	79.4						
							0400	87.5						
							0424	108.5						
							0512	122.1						
							0542	356.1						
							0612	532.9						
							0618	590.8						
							0718	643.1						
							0830	750.2						
							0848	771.8						
							1018	905.2						
							1112	1064.7						
							1200	1190.6						
							1318	1399.1						
							1454	1538.8						
							1554	1596.9						
							1718	1698.4						
							1842	1789.3						
							2012	1912.0						
							2124	1941.5						
							2236	1990.7						
							2324	1994.2						
							2400	1933.5						
							4-13	0054	1922.9					
							0142	1866.5						
							0212	1816.4						
							0348	1739.3						
							0600	1634.3						
							0742	1603.4						
							0854	1520.4						
							0954	1511.0						
							1106	1600.7						
							1230	1767.8						
							1424	1903.1						
							1630	2020.8						
							1718	2111.7						
							1842	2255.3						
							1954	2322.2						
							2230	2457.9						
							2400	2463.9						
							4-14	0036	2470.8					
							0148	2450.8						
							0412	2390.6						
							0554	2316.5						
							0724	2155.2						
							0842	2121.3						
							1036	1917.5						
							1218	1774.4						
							1312	1644.8						
							1418	1559.0						
							1530	1415.4						
							1630	1364.4						
							1706	1190.1						
							1830	1002.7						
							1954	1005.5						
							1942	998.6						
							2112	854.0						
							2230	813.1						
							2400	736.7						
Continued on next page														

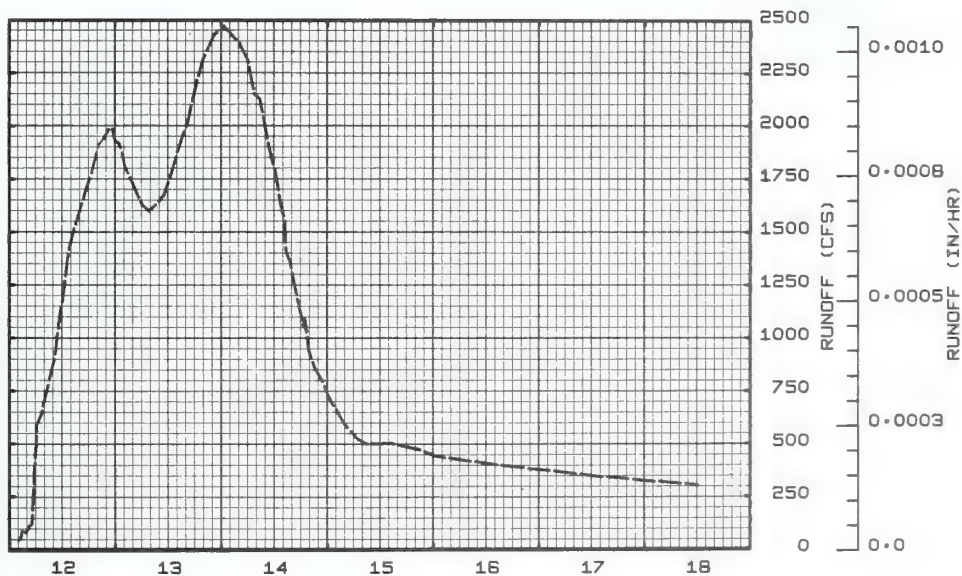
NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY .0000004237. FOR 30-DAY ANTECEDENT Q, SEE P. 69.1-1. 1/ NO PRECIPITATION RECORD IS SHOWN BECAUSE ALL OF THE WATERSHED LIES OUTSIDE OF THE AREA IN WHICH PRECIPITATION IS MEASURED.

Continued on next page

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY .0000004237. FOR 30-DAY ANTECEDENT Q, SEE P. 69.1-1. 1/ NO PRECIPITATION RECORD IS SHOWN BECAUSE ALL OF THE WATERSHED LIES OUTSIDE OF THE AREA IN WHICH PRECIPITATION IS MEASURED.

1967			SELECTED RUNOFF EVENT				CHICKASHA, OKLAHOMA				WATERSHED 100 AT ANADARKO			
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF							
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)				
			<u>Event of April 12-18, 1967-Continued</u>											
							4-15	0348	594.2					
								0648	523.9					
								0848	502.1					
								1424	504.4					
								2054	474.7					
								2400	446.5					
							4-16	1200	409.5					
							4-17	1200	350.3					
							4-18	1200	305.1					

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY .0000004237.



APRIL 12-18, 1967

CHICKASHA, OKLAHOMA WATERSHED 100

MONTHLY PRECIPITATION AND RUNOFF (inches)						CHICKASHA, OKLAHOMA WATERSHED 200 AT VERDEN AREA — 2,612,500 ACRES (4,082 SQ. MILES)										
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	P ¹ / ₀	.36	.13	1.83	5.40	2.60	2.60	2.17	1.21	5.59	2.28	.24	1.13	25.54		
		.022	.019	.019	.110	.021	.026	.024	.009	.033	.014	.012	.015	.324		
STA AVG	P ² / ₀	.47	.89	1.22	2.89	2.98	3.90	1.50	2.80	4.93	1.46	1.72	.97	25.73		
		.050	.051	.051	.066	.067	.145	.032	.034	.122	.109	.110	.056	.893		
MEAN 67 YR	P ³ / ₀	1.16	1.22	1.99	3.35	4.99	3.78	2.52	2.69	3.31	2.88	1.74	1.39	31.02		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	4-14	.0009	4-14	.0009	4-14	.0019	4-14	.006	4-13	.011	4-13	.021	4-12	.039	4-12	.076
MAXIMUMS FOR PERIOD OF RECORD ⁴ / ₀																
19 61 TO 1967	9-24 1965	.0023	9-24 1965	.0023	9-24 1965	.0046	9-24 1965	.014	9-24 1965	.028	9-23 1965	.055	9-22 1965	.108	9-21 1965	.344
Notes: For the revised watershed conditions, see table on page 69.7-4, this publication. For maps, see Hydrologic Data for Experimental Agricultural Watersheds in the United States, 1965, P. 69.7-21, and 1962, P. 69.7-9. 1/ Precipitation data obtained from a Thiessen weighted average of 66 gages for the reach between stations at Anadarko and Verden. 2/ Precipitation records began Oct. 1961; runoff records began Sept. 1961. 3/ Mean P based on 67-yr (1901-67) U.S. Weather Bureau record period at Chickasha, Okla.; missing months estimated. 4/ Period of record began Sept. 1961.																
MISCELLANEOUS DATA																
RUNOFF PEAK DATA: YEAR (1967): Maximum — Apr. 14, 2,470 cfs (18.07 ft). Minimum — Aug. 20, 4.8 cfs (7.49 ft). PERIOD OF RECORD: Maximum — Sept. 24, 1965, 8,410 cfs (27.93 ft). Minimum — Aug. 2, 1964, 1.2 cfs (7.10 ft). Period of record began Sept. 25, 1961. PEAK DISCHARGES: (Above base flow of 3,000 cfs) None.																
DAILY TEMPERATURES: See page 69.7-3.																

1967 DAILY PRECIPITATION (inches)						CHICKASHA, OKLAHOMA WATERSHED 200 AT VERDEN						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.00	.10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.01	.00	.39	.00	.17	.00
3	.00	.00	.00	.00	.00	.00	.28	.03	1.37	.00	.01	.00
4	.00	.00	.00	.00	.00	.00	.00	.48	.15	.00	.00	.04
5	.00	.00	.00	.00	.75	.00	.28	.00	.82	.00	.00	.00
6	.00	.00	.02	.00	.13	.00	.00	.00	.23	.00	.00	.00
7	.00	.00	.00	.12	.00	.00	.00	.00	.04	1.28	.00	.00
8	.00	.03	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.61	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.47	.00	.00	.00	.00	.00	.00	.00	.14
11	.00	.00	.00	.03	.00	.00	.03	.00	.00	.00	.00	.00
12	.00	.00	.09	2.94	.00	.18	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.44	.10	.00	.00	.00	.05	.00	.00	.01
14	.00	.00	.00	.00	.01	.00	.00	.00	.82	.00	.00	.06
15	.00	.00	.00	.00	.00	.00	.07	.00	.00	.11	.00	.07
16	.00	.00	.00	.07	.00	.08	.14	.00	.01	.00	.00	.59
17	.00	.00	.00	.00	.00	.23	.00	.23	.00	.00	.00	.02
18	.00	.00	.00	.00	.00	.13	1.11	.00	.00	.00	.00	.00
19	.00	.00	.45	.63	.01	.00	.14	.00	.00	.00	.00	.00
20	.00	.00	.01	.09	.58	.00	.00	.06	.86	.00	.00	.00
21	.00	.00	.00	.00	.00	.01	.00	.00	.03	.00	.00	.04
22	.00	.00	.68	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.54	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.02	.00	.00	.00	.00
25	.36	.00	.25	.00	.00	1.19	.00	.00	.00	.00	.00	.00
26	.00	.00	.03	.00	.00	.22	.00	.04	.82	.00	.00	.00
27	.00	.00	.00	.00	.00	.02	.02	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.19	.00	.09	.00	.00	.00	.01	.00
29	.00	.00	.00	.00	.20	.00	.00	.00	.00	.00	.05	.00
30	.00	.00	.04	.00	.50	.00	.00	.00	.00	.57	.00	.16
31	.00	.26	.26	.13	.00	.00	.35	.35	.32	.32	.00	.00
TOTAL	.36	.13	1.83	5.40	2.60	2.60	2.17	1.21	5.59	2.28	.24	1.13
STAAV	.47	.89	1.22	2.89	2.98	3.90	1.50	2.80	4.93	1.49	1.72	.97
NOTES												
YEARLY PRECIPITATION 25.54 INCHES. PRECIPITATION VALUES ARE A THIESSEN WEIGHTED AVERAGE OF 66 GAGES ON THE WATERSHED.												
1967 MEAN DAILY DISCHARGE (cfs)						CHICKASHA, OKLAHOMA WATERSHED 200 AT VERDEN						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	88	119	70	73	* 79	63	140	30	* 28	169	47	52
2	89	102	66	71	86	50	102	* 24	33	98	* 46	51
3	87	97	66	51	93	40	89	19	41	76	45	46
4	* 83	90	65	44	89	33	142	21	69	56	46	* 46
5	80	67	63	57	96	40	329	23	98	60	54	46
6	83	54	65	56	127	47	* 345	16	106	38	41	48
7	76	52	70	56	114	46	204	13	58	84	40	47
8	73	52	64	58	124	42	139	* 12	45	63	42	44
9	70	64	65	62	155	41	103	12	36	* 41	43	44
10	72	73	66	* 104	128	38	81	10	35	31	44	46
11	74	74	61	81	93	37	* 63	* 10	* 45	28	45	46
12	79	75	58	* 1530	74	* 36	49	9.7	45	53	46	44
13	73	* 75	* 58	* 2010	82	45	45	7.5	39	56	45	49
14	75	73	* 60	2170	78	41	40	7.2	34	53	44	54
15	78	78	56	857	58	85	35	6.8	31	52	43	56
16	* 81	78	50	554	* 49	216	34	* 6.2	37	47	43	58
17	78	76	52	456	39	119	33	6.8	401	44	42	64
18	72	75	49	* 365	33	100	49	7.5	* 243	42	41	56
19	79	72	44	330	45	84	62	5.3	82	40	42	63
20	72	69	54	399	55	116	58	* 28	53	38	* 42	60
21	78	70	58	394	70	157	42	70	52	37	42	61
22	75	76	58	370	52	95	45	104	172	35	45	61
23	72	76	85	512	55	64	50	127	186	33	46	62
24	73	77	71	471	50	40	* 48	* 122	269	33	46	60
25	69	74	76	390	42	39	49	78	* 176	33	45	57
26	85	72	77	176	38	* 46	55	41	144	27	44	56
27	83	* 73	* 89	125	37	35	50	28	135	30	41	56
28	84	72	106	105	38	* 324	42	33	251	31	43	55
29	83		92	97	43	497	42	30	406	32	45	56
30	* 81		76	91	55	244	41	26	290	33	47	54
31	114		68		77		34	25		43		56
MEAN	79	75	66	404	73	95	85	31	121	50	44	54
INCHES	.022	.019	.019	.110	.21	.026	.024	.009	.033	.014	.012	.019
NOTES: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .00009111. TO CONVERT DISCHARGE IN INCHES TO AC-FT, MULTIPLY BY 217,700. YEARLY MEAN DISCHARGE, 98 CFS. YEARLY DISCHARGE, .324 INCHES. MAXIMUM AND MINIMUM FLOWS EACH MONTH UNDERLINED. * DISCHARGE MEASUREMENTS.												

1967 SELECTED RUNOFF EVENT			CHICKASHA, OKLAHOMA				WATERSHED 200 AT VERDEN			
ANTECEDENT CONDITIONS			RAINFALL 1/				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)
Event of April 12-18, 1967										
Watershed conditions: The land use of this 4,082 sq. mi. watershed is not monitored seasonally. For revised watershed conditions, see p. 69.7-4, this publication.							4-12	0206	57.0	
								0242	79.4	
								0300	116.3	
								0318	187.2	
								0324	268.4	
								0330	355.3	
								0336	457.1	
								0348	553.1	
								0400	577.4	
								0430	462.8	
								0448	454.1	
								0506	464.5	
								0530	481.1	
								0548	502.3	
								0612	655.4	
								0630	817.5	
								0636	951.2	
								0648	1101.6	
								0706	1254.1	
								0718	1412.5	
							0736	1603.3		
							0754	1790.4		
							0812	1984.5		
							0842	2084.5		
							0918	2244.1		
							1024	2352.9		
							1054	2252.3		
							1206	2245.8		
							1318	2132.3		
							1530	2025.5		
							1754	1918.1		
							1924	1908.6		
							2048	1911.0		
							2400	1939.7		
							4-13	0406	2028.4	
								0554	2048.9	
								0854	2018.4	
								1154	1944.9	
								1442	1859.1	
								1548	1826.3	
1618	1838.9									
1724	1881.1									
1918	2068.4									
2148	2231.9									
2400	2324.8									
4-14	0400	2437.6								
	0712	2469.0								
	1018	2420.7								
	1200	2338.2								
	1530	2194.4								
	1712	2037.4								
	1918	1837.3								
	2054	1651.1								
	2254	1510.0								
	2400	1400.7								
4-15	0048	1345.3								
	0254	1194.3								
	0454	1073.1								
	0724	939.3								
	0954	812.2								
	1200	759.8								
	1442	706.7								
	1754	674.9								
	2400	632.2								
	4-16	0218	627.1							

Continued on next page

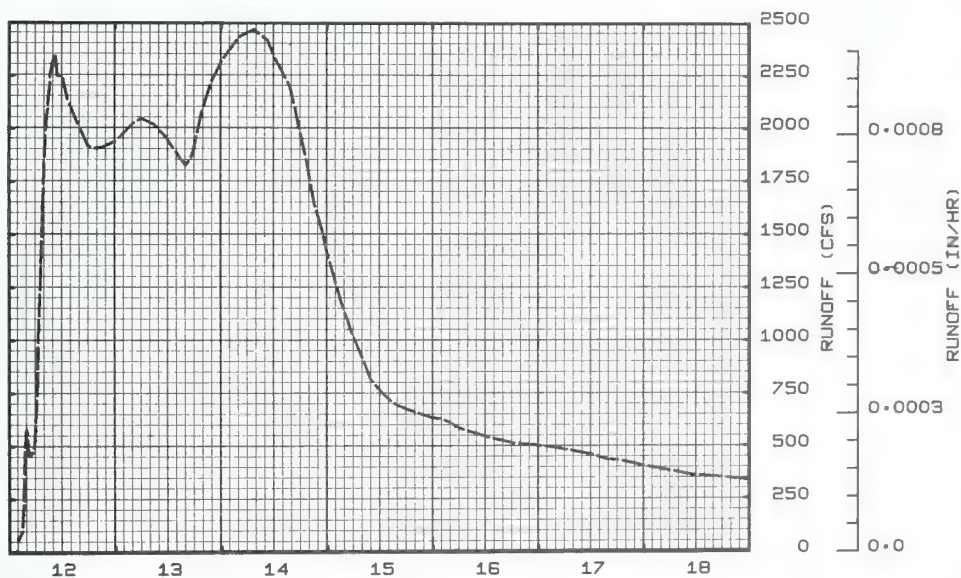
NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY .0000003796. FOR 30-DAY ANTECEDENT Q, SEE P. 69.2-2, THIS PUBLICATION. 1/ NO PRECIPITATION RECORD IS SHOWN BECAUSE MOST OF THE WATERSHED LIES OUTSIDE OF THE AREA IN WHICH PRECIPITATION IS MEASURED.

Continued on next page

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY .0000003796. FOR 30-DAY ANTECEDENT Q, SEE P. 69.2-2, THIS PUBLICATION. 1/ NO PRECIPITATION RECORD IS SHOWN BECAUSE MOST OF THE WATERSHED LIES OUTSIDE OF THE AREA IN WHICH PRECIPITATION IS MEASURED.

1967 SELECTED RUNOFF EVENT			CHICKASHA, OKLAHOMA				WATERSHED 200 AT VERDEN			
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)
Event of April 12-18, 1967-Continued										
							4-16	0600	584.2	
								1200	543.8	
								1906	509.7	
								2400	501.4	
							4-17	0406	491.2	
								1254	454.2	
								1542	434.4	
								1800	433.0	
								2400	405.0	
							4-18	0600	381.6	
								1106	360.0	
								1754	349.2	
								2400	337.9	

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY .000003796.



APRIL 12-18, 1967

CHICKASHA, OKLAHOMA WATERSHED 200

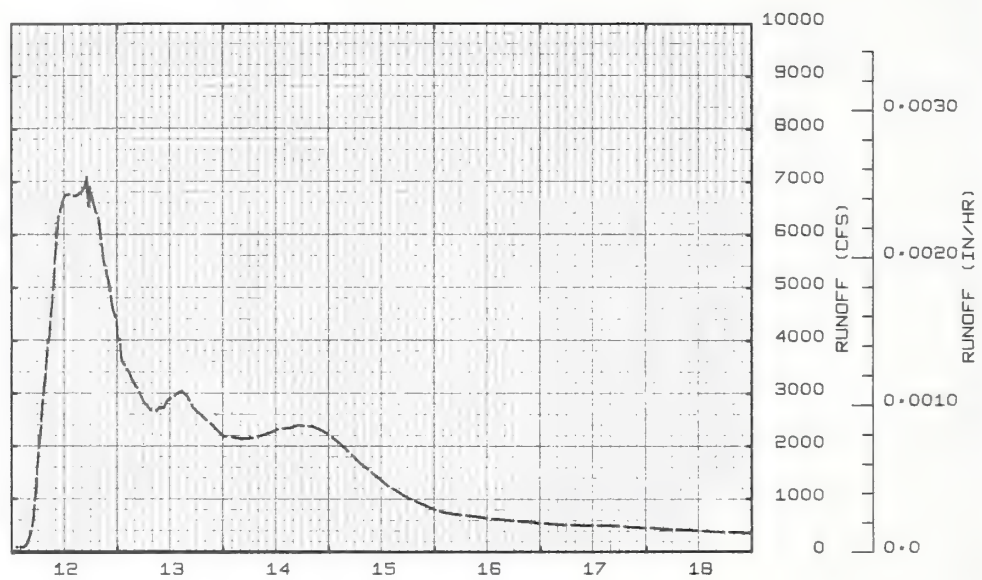
MONTHLY PRECIPITATION AND RUNOFF (inches)						CHICKASHA, OKLAHOMA WATERSHED 500 NEAR CHICKASHA AREA — 2,768,000 ACRES (4,325 SQ. MILES)										
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967 P ^{1/} C	.44 .020	.12 .017	2.08 .017	6.14 .147	3.02 .023	2.84 .023	1.85 .023	1.39 .007	5.42 .031	2.72 .021	.26 .011	1.04 .014	27.32 .354			
STA AVG P ^{2/} C	.59 .039	.98 .042	1.31 .046	2.95 .076	2.90 .056	3.26 .066	1.61 .016	3.32 .036	3.81 .107	1.37 .111	2.16 .098	.90 .050	25.16 .743			
MEAN P ^{3/} 67 YR	1.16	1.22	1.99	3.35	4.99	3.78	2.52	2.69	3.31	2.88	1.74	1.39	31.02			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	4-12	.0026	4-12	.0025	4-12	.0049	4-12	.015	4-12	.028	4-12	.044	4-12	.066	4-12	.110
MAXIMUMS FOR PERIOD OF RECORD ^{4/}																
1964 TO 1967	4-12 1967	.0026	4-12 1967	.0025	4-12 1967	.0049	4-12 1967	.015	4-12 1967	.028	9-25 1965	.052	9-25 1965	.099	9-22 1965	.284
Notes: For the revised watershed conditions, see table on page 69.7-4 of Hydrologic Data for Experimental Agricultural Watersheds in the United States, this publication. For maps, see Hydrologic Data for Experimental Agricultural Watersheds in the United States, 1965, P. 69.7-21 and 1962, P. 69.7-9. ^{1/} The station at Chickasha (4th St.) Watershed 400 was discontinued in 1967, therefore, causing a new Thiessen weighted average for this watershed. Precipitation data obtained from a Thiessen weighted average of 42 gages for the reach between Verden (200) and Chickasha (500). ^{2/} Precipitation records began Oct. 1961; runoff records began Jan. 1964. ^{3/} Mean P based on 67-yr (1901-67) U.S. Weather Bureau record period at Chickasha, Okla.; missing months estimated. ^{4/} Period of record began Jan. 1964.																
MISCELLANEOUS DATA																
RUNOFF PEAK DATA: YEAR (1967): Maximum — Apr. 12, 7,150 cfs (22.77 ft). Minimum — Aug. 15, no flow (3.41 ft). PERIOD OF RECORD: Maximum — Apr. 12, 1967, 7,150 cfs (22.77 ft). Minimum — no flow. Period of record began Jan. 1, 1964. PEAK DISCHARGES: (Above base flow of 3,000 cfs) 1967 — Apr. 12, 7,150 cfs (22.77 ft).																
DAILY TEMPERATURE: See page 69.7-3.																

1967 DAILY PRECIPITATION (inches)						CHICKASHA, OKLAHOMA WATERSHED 500 NEAR CHICKASHA						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.00	.09	.00	.00	.01	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.01	.00	.76	.00	.18	.00
3	.00	.00	.00	.00	.00	.00	.22	.06	1.12	.00	.02	.00
4	.00	.00	.00	.00	.00	.00	.00	.64	.22	.00	.00	.06
5	.00	.00	.00	.00	1.04	.00	.34	.00	.79	.00	.00	.00
6	.00	.00	.03	.00	.02	.00	.00	.00	.10	.00	.00	.00
7	.00	.00	.00	.28	.00	.00	.00	.00	.01	1.52	.00	.00
8	.00	.03	.00	.00	.00	.02	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.90	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.58	.00	.00	.00	.00	.00	.00	.00	.06
11	.00	.00	.00	.00	.00	.04	.03	.01	.00	.00	.00	.00
12	.00	.00	.12	3.09	.00	.06	.00	.00	.00	.00	.00	.00
13	.00	.00	.01	.50	.05	.00	.00	.00	.08	.00	.00	.02
14	.00	.00	.00	.00	.02	.00	.00	.02	.41	.00	.00	.09
15	.00	.00	.00	.00	.00	.00	.10	.00	.00	.26	.00	.08
16	.00	.00	.00	.06	.00	.03	.17	.00	.01	.00	.00	.53
17	.00	.00	.00	.00	.00	.15	.00	.32	.00	.00	.00	.01
18	.00	.00	.00	.00	.00	.03	.74	.00	.00	.00	.00	.00
19	.00	.00	.49	.41	.00	.00	.02	.00	.00	.00	.00	.00
20	.00	.00	.01	.32	.86	.00	.00	.00	.64	.00	.00	.00
21	.00	.00	.00	.00	.00	.01	.01	.00	.11	.00	.00	.01
22	.00	.00	.63	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.58	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.09	.00	.00	.00	.00	.00	.00
25	.39	.00	.32	.00	.00	1.42	.00	.00	.00	.00	.00	.00
26	.05	.00	.07	.00	.00	.40	.01	.00	1.17	.00	.00	.00
27	.00	.00	.00	.00	.00	.01	.01	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.02	.00	.19	.00	.00	.00	.01	.00
29	.00	.00	.00	.00	.38	.00	.00	.00	.00	.00	.05	.00
30	.00	.00	.11	.00	.50	.00	.00	.00	.00	.56	.00	.18
31	.00	.00	.29	.00	.12	.00	.00	.34	.38	.00	.00	.00
TOTAL	.44	.12	2.08	6.14	3.02	2.84	1.85	1.39	5.42	2.72	.26	1.04
STAAV	.59	.98	1.31	2.95	2.90	3.26	1.61	3.22	3.81	1.37	2.16	.90
NOTES: YEARLY PRECIPITATION 27.32 INCHES. PRECIPITATION VALUES ARE A THIESSEN WEIGHTED AVERAGE OF 42 GAGES ON THE WATERSHED.												
1967 MEAN DAILY DISCHARGE (cfs)						CHICKASHA, OKLAHOMA WATERSHED 500 NEAR CHICKASHA						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	84	107	62	64	100	73	204	26	15	241	35	46
2	84	103	61	59	84	58	139	22	23	138	37	47
3	84	88	55	58	88	48	114	18	34	87	39	47
4	82	82	55	41	95	39	99	16	86	75	37	45
5	83	76	57	28	104	30	202	18	164	66	37	42
6	81	57	57	43	392	31	344	20	130	65	47	43
7	78	50	57	44	178	43	290	16	98	537	39	44
8	76	47	60	48	133	44	183	6.0	57	333	37	45
9	75	49	58	74	137	43	133	2.6	45	82	41	42
10	75	55	57	251	173	40	100	1.8	36	60	42	41
11	74	67	58	139	138	40	78	.9	31	45	43	42
12	73	70	52	4320	92	37	62	.6	41	37	45	44
13	73	72	50	2870	68	35	48	.3	43	50	45	41
14	73	71	45	2270	77	39	41	.1	44	52	45	46
15	73	67	45	1410	75	37	34	.1	36	54	43	50
16	73	72	43	649	55	101	31	.1	30	48	45	55
17	73	73	39	499	45	190	34	35	62	41	44	62
18	73	70	35	397	37	120	35	6.0	359	38	41	62
19	73	69	37	334	27	97	49	3.7	171	37	41	63
20	73	68	43	486	86	64	56	2.1	76	33	43	65
21	73	67	41	436	70	109	47	1.8	67	32	42	60
22	73	68	52	383	66	121	33	.50	57	30	42	58
23	73	73	57	416	51	79	31	.87	182	30	44	59
24	73	71	75	505	46	55	40	117	172	28	44	62
25	73	73	86	466	45	50	30	107	235	26	44	58
26	69	70	211	330	36	128	34	68	213	25	44	56
27	81	68	76	167	34	46	45	43	303	21	44	55
28	81	66	80	130	33	29	43	37	173	22	42	57
29	82	86	116	116	39	412	33	26	282	23	42	56
30	77	77	111	111	41	409	30	25	368	26	44	57
31	77	73	73	73	60	34	34	19	34	34	44	58
MEAN	76	70	63	571	87	88	86	25	121	78	42	52
INCHES	.020	.017	.017	.147	.023	.023	.023	.007	.031	.021	.011	.014
NOTES: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .000008599. TO CONVERT DISCHARGE IN INCHES TO AC-FT, MULTIPLY BY 230,700. YEARLY MEAN DISCHARGE, 113 CFS. YEARLY DISCHARGE, .354 INCHES. MAXIMUM AND MINIMUM FLOWS EACH MONTH UNDERLINED. * DISCHARGE MEASUREMENTS.												

1967 SELECTED RUNOFF EVENT			CHICKASHA, OKLAHOMA				WATERSHED 500NEAR CHICKASHA			
ANTECEDENT CONDITIONS			RAINFALL 1/				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)
Event of April 12-18, 1967										
<u>Watershed conditions:</u> The land use of this 4,325 sq. mi. watershed is not monitored seasonally. For revised watershed conditions, see p. 69.7-4, this publication.							4-12	0112	81.3	
								0212	79.2	
								0248	79.1	
								0312	110.1	
								0342	186.6	
								0406	267.1	
								0424	308.0	
								0442	450.5	
								0454	577.9	
								0506	715.1	
								0512	844.4	
								0518	983.5	
							0524	1068.1		
							0530	1185.0		
							0542	1361.5		
							0548	1543.7		
							0600	1742.7		
							0612	1943.6		
							0630	2183.5		
							0642	2379.5		
							0654	2609.5		
							0706	2845.0		
							0718	3086.4		
							0742	3332.9		
							0754	3617.5		
							0812	3887.2		
							0836	4112.3		
							0854	4466.4		
							0912	4766.7		
							0930	5052.1		
							0942	5366.4		
							1000	5682.3		
							1018	6004.7		
							1036	6338.7		
							1100	6426.2		
							1130	6615.8		
							1206	6751.9		
							1306	6767.3		
							1430	6735.9		
							1542	6800.0		
							1618	6880.0		
							1636	6924.4		
							1706	7113.9		
							1724	6552.8		
							1748	6903.2		
							1842	6538.5		
							1942	6320.4		
							2024	5863.4		
							2048	5532.3		
							2130	5293.2		
							2212	5036.3		
							2248	4633.2		
							2324	4464.8		
							2348	4418.1		
							2400	4011.3		
							4-13	0030	4029.4	
								0042	3723.1	
								0106	3600.3	
								0148	3500.8	
								0236	3404.6	
								0330	3222.5	
								0442	3071.7	
								0554	2848.7	
							0730	2659.2		
							0854	2674.8		
Continued on next page										
NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY .000003583. FOR 30-DAY ANTECEDENT Q, SEE P. 69.5-2, THIS PUBLICATION. 1/ NO PRECIPITATION RECORD IS SHOWN BECAUSE MOST OF THE WATERSHED LIES OUTSIDE OF THE AREA IN WHICH PRECIPITATION IS MEASURED.										

1967 SELECTED RUNOFF EVENT			CHICKASHA, OKLAHOMA				WATERSHED 500 NEAR CHICKASHA			
ANTECEDENT CONDITIONS			RAINFALL 1/				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)
<u>Event of April 12-18, 1967-Continued</u>										
							4-13	0930	2743.2	
								1030	2734.7	
								1124	2884.0	
								1200	2902.1	
								1324	2743.2	
								1430	2884.0	
								1554	2944.7	
								1618	2884.0	
								1706	2735.8	
								1930	2549.4	
								2154	2369.3	
								2400	2190.3	
							4-14	0218	2175.0	
								0418	2141.6	
								0718	2103.1	
								0936	2234.8	
								1042	2262.8	
								1224	2324.9	
								1512	2354.0	
								1654	2401.8	
								2012	2375.6	
								2230	2301.0	
								2400	2213.1	
							4-15	0230	2054.7	
								0500	1857.7	
								0706	1676.7	
								0830	1590.2	
								1018	1433.0	
								1118	1402.3	
								1324	1250.7	
								1512	1159.9	
								1754	1015.5	
								2112	904.1	
								2400	795.1	
							4-16	0236	744.1	
								0600	698.9	
								1006	658.3	
								1748	594.3	
								2212	556.5	
								2400	542.8	
							4-17	0554	508.2	
								1042	504.8	
								1442	503.9	
								2130	484.6	
								2400	450.4	
							4-18	0654	418.0	
								1554	377.0	
								2030	363.1	
								2400	351.1	

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY .0000003583.



APRIL 12-18, 1967

CHICKASHA, OKLAHOMA WATERSHED 500

MONTHLY PRECIPITATION AND RUNOFF (inches)							CHICKASHA, OKLAHOMA WATERSHED 600 NEAR TABLER AREA — 3,011,800 ACRES (4,706 SQ. MILES)									
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	P1/ Q	.15 .022	.07 .019	2.46 .023	5.34 .180	3.81 .030	2.01 .024	2.59 .023	.94 .006	4.69 .030	3.17 .024	.33 .012	1.04 .015	26.60 .408		
STA AVG	P2/ Q	.80 .042	1.14 .042	1.44 .049	3.26 .086	3.88 .068	1.97 .069	1.45 .017	4.33 .036	3.76 .091	1.46 .088	1.78 .086	.74 .045	26.01 .719		
MEAN 67 YR	P3/ Q	1.16	1.22	1.99	3.35	4.99	3.78	2.52	2.69	3.31	2.88	1.74	1.39	31.02		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	4-12	.0026	4-12	.0026	4-12	.0051	4-12	.015	4-12	.029	4-12	.051	4-12	.079	4-10	.130
MAXIMUMS FOR PERIOD OF RECORD 4/																
19 63 TO 1967	4-12 1967	.0026	4-12 1967	.0026	4-12 1967	.0051	4-12 1967	.015	4-12 1967	.029	4-12 1967	.051	9-25 1965	.087	9-22 1965	.256
Notes: For the revised watershed conditions, see table on P. 69.7-4 of Hydrologic Data for Experimental Agricultural Watersheds in the United States, this publication. For maps, see Hydrologic Data for Experimental Agricultural Watersheds in the United States, 1965, P. 69.7-21 and 1962, P. 69.7-9. 1/ Precipitation data based on a Thiessen weighted average of 66 gages for the reach between stations at Chickasha (Turnpike) and Tabler, Okla. 2/ Precipitation records began Oct. 1961; runoff records began July 1963. 3/ Mean P based on 67-yr (1901-67) U.S. Weather Bureau record period at Chickasha, Okla.; missing estimated. 4/ Period of record began July 1963.																
MISCELLANEOUS DATA																
RUNOFF PEAK DATA: YEAR (1967): Maximum — Apr. 12, 7,820 cfs (24.54 ft). Minimum — Aug. 18, no flow (10.15 ft). PERIOD OF RECORD: Maximum — Apr. 12, 1967, 7,820 cfs (24.54 ft). Minimum — no flow. Period of record began July 16, 1963. PEAK DISCHARGES: (Above base flow of 3,000 cfs) 1967 — Apr. 12, 7,820 cfs (24.54 ft). DAILY TEMPERATURE: See P. 69.7-3.																

1967 DAILY PRECIPITATION (inches)						CHICKASHA, OKLAHOMA WATERSHED 600 NEAR TABLER						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.00	.06	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00
2	.00	.00	.00	.00	.00	.00	.02	.00	.29	.00	.17	.00
3	.00	.00	.00	.00	.00	.00	.49	.03	1.13	.00	.05	.00
4	.00	.00	.00	.00	.00	.00	.00	.46	.24	.00	.00	.02
5	.00	.00	.00	.00	1.12	.00	.25	.00	.86	.00	.00	.00
6	.00	.00	.03	.00	.00	.00	.00	.00	.02	.00	.00	.00
7	.00	.00	.00	.36	.00	.00	.00	.00	.01	.74	.00	.00
8	.00	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	1.57	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.49	.00	.00	.00	.00	.00	.00	.00	.06
11	.00	.00	.00	.00	.00	.02	.02	.00	.00	.00	.00	.00
12	.00	.00	.05	1.75	.00	.07	.01	.00	.00	.00	.00	.00
13	.00	.00	.01	.51	.03	.00	.00	.00	.06	.00	.00	.05
14	.00	.00	.00	.00	.02	.00	.00	.01	.52	.00	.00	.11
15	.00	.00	.00	.00	.00	.00	.09	.00	.00	1.02	.00	.07
16	.00	.00	.00	.00	.00	.00	.11	.00	.10	.00	.00	.57
17	.00	.00	.00	.00	.00	.01	.00	.18	.00	.00	.00	.01
18	.00	.00	.00	.01	.00	.10	.63	.00	.01	.00	.00	.30
19	.00	.00	.38	.18	.00	.00	.11	.00	.00	.00	.00	.00
20	.00	.00	.00	.47	1.09	.00	.00	.01	.45	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.01	.00	.06	.00	.00	.01
22	.00	.00	.65	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.15	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00
25	.08	.00	.69	.00	.00	.62	.00	.00	.00	.00	.00	.00
26	.07	.00	.11	.00	.00	.91	.00	.00	.94	.00	.00	.00
27	.00	.00	.00	.00	.00	.13	.09	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.02	.00	.76	.00	.00	.00	.04	.00
29	.00	-----	.00	.00	.63	.00	.00	.00	.00	.01	.06	.00
30	.00	-----	.07	.00	.69	.00	.00	.00	.00	1.01	.00	.14
31	.00	-----	.47	-----	.21	-----	.00	.24	-----	.39	-----	.00
TOTAL	.15	.07	2.46	5.34	3.81	2.01	2.59	.94	4.69	3.17	.33	1.04
INCHES	.80	1.14	1.44	3.26	3.88	1.97	1.45	4.33	2.76	1.46	1.78	.74

NOTES

YEARLY PRECIPITATION 26.60 INCHES. PRECIPITATION VALUES ARE A THIESSEN WEIGHTED AVERAGE OF 66 GAGES ON THE WATERSHED.

1967 MEAN DAILY DISCHARGE (cfs)						CHICKASHA, OKLAHOMA WATERSHED 600 NEAR TABLER						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	84	97	84	134	* 123	94	255	25	* 18	294	82	55
2	115	129	76	110	113	84	157	19	15	204	* 64	57
3	100	118	73	103	111	71	139	18	32	135	63	57
4	* 94	106	64	97	127	58	128	17	94	99	58	* 55
5	97	102	66	74	137	50	152	16	223	77	54	51
6	91	91	74	70	589	40	* 298	20	166	63	55	49
7	84	73	74	80	333	43	346	20	143	94	62	49
8	82	67	77	84	173	50	236	13	94	525	51	49
9	74	63	80	101	145	49	160	* 8.2	59	* 152	49	51
10	64	59	71	* 1110	156	44	* 114	4.8	48	84	51	49
11	84	71	70	* 340	152	44	86	* 2.9	* 40	64	53	49
12	94	80	67	* 4710	116	* 42	67	2.5	37	48	50	53
13	89	* 82	* 67	* 4580	92	44	53	1.8	45	44	51	51
14	88	79	* 62	* 2520	91	41	41	* 1.4	51	62	50	50
15	83	79	58	1800	* 98	44	34	1.1	57	185	49	60
16	* 84	80	58	837	88	38	30	.8	53	147	49	69
17	84	88	53	* 614	71	166	* 34	.6	49	74	* 48	79
18	84	88	47	506	60	138	38	* 0	203	57	48	80
19	77	88	48	407	50	108	48	.0	304	54	48	77
20	80	83	58	698	93	91	66	.0	147	50	48	77
21	102	83	64	* 870	231	73	57	.0	97	44	48	74
22	83	83	63	485	92	141	48	.0	86	43	49	71
23	91	88	98	425	83	111	35	.0	95	43	49	71
24	84	89	97	498	64	80	36	* 156	198	42	49	74
25	83	91	154	* 476	62	116	34	155	* 205	36	49	73
26	84	92	* 402	397	54	* 354	26	111	188	34	49	67
27	89	* 91	173	223	49	149	35	66	* 329	35	49	64
28	100	88	127	156	48	74	41	42	225	32	49	64
29	95	-----	129	141	55	171	71	32	211	35	49	63
30	* 95	-----	125	130	74	* 471	35	24	323	40	51	64
31	91	-----	122	-----	* 122	-----	* 31	21	-----	83	-----	67
MEAN	88	87	93	759	124	103	95	25	128	96	52	62
INCHES	.022	.019	.023	.180	.030	.024	.023	.006	.030	.024	.012	.015

NOTES TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .000007903. TO CONVERT DISCHARGE IN INCHES TO AC-FT, MULTIPLY BY 251,000. YEARLY MEAN DISCHARGE, 142 CFS. YEARLY DISCHARGE, .408 INCHES. MAXIMUM AND MINIMUM FLOWS EACH MONTH UNDERLINED. * DISCHARGE MEASUREMENTS.

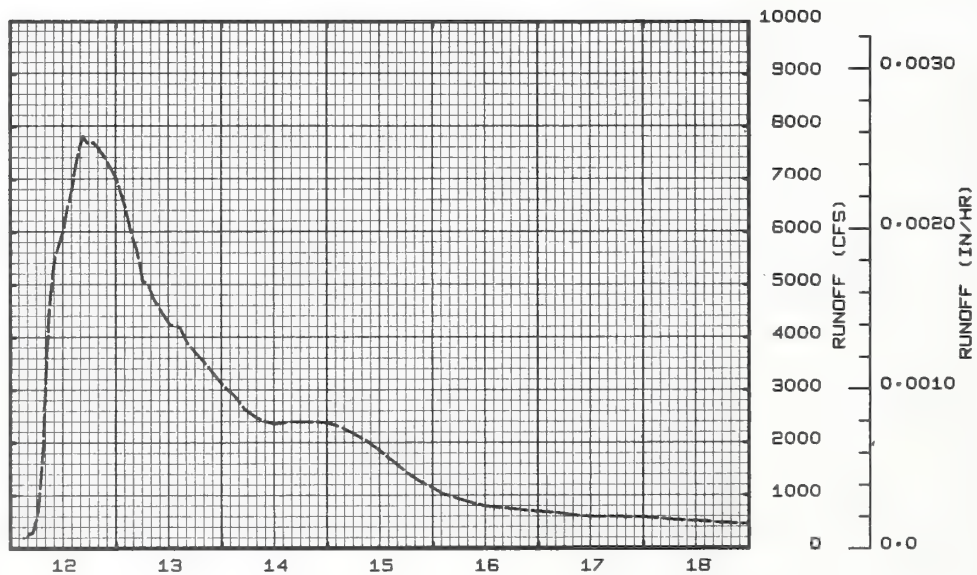
1967 SELECTED RUNOFF EVENT			CHICKASHA, OKLAHOMA				WATERSHED 600 NEAR TABLER		
ANTECEDENT CONDITIONS			RAINFALL 1/				RUNOFF		
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	ACC. (inches)
			Event of April 12-18, 1967						
Watershed conditions: The land use of this 4,706 sq. mi. watershed is not monitored seasonally. For revised watershed conditions, see p. 69.7-4, this publication.							4-12	0300	189.4
								0342	214.1
								0354	218.1
								0418	273.2
								0448	281.8
								0500	285.6
								0512	323.6
								0606	588.5
								0630	861.3
								0642	1105.8
								0700	1372.1
								0712	1659.8
								0724	1974.0
								0736	2304.3
								0742	2643.2
								0754	2982.9
								0806	3350.3
								0812	3699.5
								0830	4039.9
								0842	4402.2
								0900	4771.6
								0918	4913.1
								0942	5332.1
								1012	5558.4
								1100	5775.2
								1200	6044.6
								1254	6444.8
								1354	6813.9
								1448	7248.9
								1542	7616.5
								1630	7821.5
								1730	7688.5
								1848	7703.9
								2012	7572.7
								2142	7384.6
							4-13	2336	7082.7
								2400	7024.5
								0206	6460.6
								0330	5944.1
								0436	5696.4
								0542	5272.0
								0600	5068.9
								0706	5049.7
								0830	4742.8
								1012	4510.1
								1206	4251.4
								1424	4198.9
								1624	3869.8
								1830	3682.2
								2130	3381.4
							4-14	2400	3120.9
								0306	2887.0
								0506	2652.4
								0748	2475.4
								0948	2407.8
								1154	2363.9
								1300	2373.3
								1500	2394.6
								1754	2433.4
								2100	2404.0
							4-15	2400	2376.6
								0504	2355.6
								0300	2298.3
								0600	2174.9
								0900	2076.2

Continued on next page

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY .000003293. FOR 30-DAY ANTECEDENT Q, SEE P. 69.6-2, THIS PUBLICATION. 1/ NO PRECIPITATION RECORD IS SHOWN BECAUSE MOST OF THE WATERSHED LIES OUTSIDE OF THE AREA IN WHICH PRECIPITATION IS MEASURED.

1967 SELECTED RUNOFF EVENT			CHICKASHA, OKLAHOMA				WATERSHED 600 NEAR TABLER			
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)
			Event of April 12-18, 1967-Continued							
							4-15	1200	1835.9	
								1500	1635.8	
								1800	1432.1	
								2054	1269.1	
								2400	1135.3	
							4-16	0206	1033.0	
								0418	965.4	
								0900	847.6	
								1200	794.9	
								1800	737.8	
							4-17	2400	692.3	
								0600	642.1	
								1048	600.5	
								1200	594.5	
								1754	587.1	
							4-18	2054	584.7	
								2400	576.2	
								0554	537.0	
								1200	505.5	
								1754	472.7	
								2400	447.4	

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY .000003293.



APRIL 12-18, 1967

CHICKASHA, OKLAHOMA WATERSHED 600

MONTHLY PRECIPITATION AND RUNOFF (inches)						CHICKASHA, OKLAHOMA AREA — 3,061,120 ACRES		WATERSHED 700 AT ALEX (4,783 SQ. MILES)						
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1967	P 1/ O	.12 .021	.06 .019	2.23 .023	5.24 .187	4.73 .038	1.91 .023	2.02 .024	.77 .005	5.64 .028	2.68 .023	.36 .013	.98 .016	26.74 .420
STA AVG	P 2/ O	.95 .053	1.28 .052	1.41 .056	3.16 .088	4.22 .079	1.88 .150	1.69 .034	3.62 .042	3.74 .106	1.12 .099	1.98 .110	.73 .058	25.78 .927
MEAN 67 YR	P 3/ O	1.16	1.22	1.99	3.35	4.99	3.78	2.52	2.69	3.31	2.88	1.74	1.39	31.02

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	4-12	.0024	4-12	.0024	4-12	.0048	4-12	.014	4-12	.028	4-12	.051	4-12	.080	4-10	.138

MAXIMUMS FOR PERIOD OF RECORD 4/																
19 61 TO 1967	9-20 1962	.0032	9-20 1962	.0032	9-20 1962	.0063	9-20 1962	.019	9-20 1962	.035	9-20 1962	.057	9-20 1962	.097	9-22 1965	.241

Notes: For the revised watershed conditions, see table on p. 69.7-4 of Hydrologic Data for Experimental Agricultural Watersheds in the United States, this publication. For maps, see Hydrologic Data for Experimental Agricultural Watersheds in the United States, 1965, P. 69.7-21 and 1962, P. 69.7-9. 1/ Precipitation data based on a Thiessen weighted average of 21 gages on the reach from Tabler to Alex, Okla. 2/ Precipitation records began Oct. 1961; runoff records began Sept. 1961. 3/ Mean P based on 67-yr (1901-67) U.S. Weather Bureau record period at Chickasha, Okla.; missing months estimated. 4/ Period of record began Sept. 1961.

MISCELLANEOUS DATA														
RUNOFF PEAK DATA: YEAR (1967): Maximum — Apr. 12, 7,440 cfs (15.52 ft). Minimum — Aug. 22, 0.1 cfs (2.14 ft). PERIOD OF RECORD: Maximum — Sept. 20, 1962, 9,750 cfs (16.18 ft). Minimum — no flow. Period of record began Sept. 13, 1961. PEAK DISCHARGES: (Above base flow of 3,000 cfs) 1967 — Apr. 12, 7,440 cfs (15.52 ft).														
DAILY TEMPERATURE: See p. 69.7-3.														

1967 DAILY PRECIPITATION (inches)						CHICKASHA, OKLAHOMA WATERSHED 700 AT ALEX						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.00	.06	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.18	.00
3	.00	.00	.00	.00	.01	.00	.61	.00	1.36	.00	.04	.00
4	.00	.00	.00	.00	.00	.00	.00	.36	.78	.00	.00	.00
5	.00	.00	.00	.00	1.26	.00	.29	.01	.78	.00	.00	.00
6	.00	.00	.04	.00	.00	.00	.00	.00	.01	.00	.00	.00
7	.00	.00	.00	.32	.00	.00	.00	.00	.02	.50	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	1.17	.00	.00	.00	.00	.00	.00	.01	.00
10	.00	.00	.00	.96	.00	.00	.00	.00	.00	.00	.00	.04
11	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00
12	.00	.00	.05	1.81	.00	.07	.00	.00	.00	.00	.00	.00
13	.00	.00	.08	.46	.02	.00	.00	.00	.05	.00	.00	.02
14	.00	.00	.00	.00	.02	.00	.00	.01	.45	.00	.00	.15
15	.00	.00	.00	.00	.00	.00	.01	.03	.00	1.20	.00	.05
16	.00	.00	.00	.00	.00	.00	.17	.00	.22	.00	.00	.58
17	.00	.00	.00	.00	.00	.00	.00	.12	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.06	.37	.00	.01	.00	.00	.00
19	.00	.00	.34	.22	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.30	1.41	.00	.00	.00	.38	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.02	.00	.11	.00	.00	.00
22	.00	.00	.68	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.08	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.58	.00	.00	.61	.00	.00	.00	.00	.00	.00
26	.12	.00	.11	.00	.00	1.05	.00	.00	.93	.00	.00	.00
27	.00	.00	.00	.00	.00	.04	.03	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.52	.00	.00	.00	.05	.00
29	.00	-----	.00	.00	.81	.00	.00	.00	.00	.03	.08	.00
30	.00	-----	.01	.00	.93	.00	.00	.11	.00	.67	.00	.14
31	.00	-----	.34	-----	.27	-----	.00	.12	-----	.28	-----	.00
TOTAL	.12	.06	2.23	5.24	4.73	1.91	2.02	.77	5.64	2.68	.36	.98
ST. AVE.	.95	1.28	1.41	3.16	4.22	1.88	1.69	3.62	3.74	1.12	1.98	.73
NOTES: YEARLY PRECIPITATION 26.74 INCHES. PRECIPITATION VALUES ARE A THIENSEN WEIGHTED AVERAGE OF 21 GAGES ON THE WATERSHED.												
1967 MEAN DAILY DISCHARGE (cfs)						CHICKASHA, OKLAHOMA WATERSHED 700 AT ALEX						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	<u>88</u>	<u>90</u>	<u>82</u>	<u>141</u>	* <u>132</u>	<u>119</u>	<u>280</u>	<u>29</u>	* <u>18</u>	<u>317</u>	* <u>80</u>	<u>56</u>
2	<u>125</u>	<u>132</u>	<u>73</u>	<u>114</u>	<u>108</u>	<u>105</u>	<u>168</u>	<u>22</u>	* <u>16</u>	<u>200</u>	* <u>64</u>	<u>57</u>
3	<u>117</u>	<u>130</u>	<u>71</u>	<u>104</u>	<u>96</u>	<u>87</u>	<u>163</u>	<u>19</u>	<u>29</u>	<u>123</u>	<u>65</u>	<u>57</u>
4	* <u>102</u>	<u>117</u>	<u>62</u>	<u>94</u>	<u>102</u>	<u>74</u>	<u>146</u>	<u>19</u>	<u>90</u>	<u>91</u>	<u>62</u>	* <u>57</u>
5	<u>104</u>	<u>110</u>	<u>57</u>	<u>68</u>	<u>138</u>	<u>61</u>	<u>141</u>	<u>16</u>	<u>253</u>	<u>77</u>	<u>60</u>	<u>55</u>
6	<u>100</u>	<u>98</u>	<u>68</u>	<u>57</u>	<u>803</u>	<u>51</u>	* <u>273</u>	<u>17</u>	<u>193</u>	<u>71</u>	<u>58</u>	<u>53</u>
7	<u>94</u>	<u>79</u>	<u>73</u>	<u>68</u>	<u>511</u>	<u>48</u>	<u>380</u>	* <u>19</u>	<u>137</u>	<u>79</u>	<u>62</u>	<u>54</u>
8	<u>82</u>	<u>70</u>	<u>71</u>	<u>79</u>	<u>264</u>	<u>55</u>	<u>272</u>	<u>15</u>	<u>97</u>	<u>520</u>	<u>57</u>	<u>54</u>
9	<u>82</u>	<u>62</u>	<u>82</u>	<u>91</u>	<u>199</u>	<u>53</u>	<u>181</u>	* <u>9.7</u>	<u>65</u>	* <u>171</u>	<u>52</u>	<u>55</u>
10	<u>64</u>	<u>59</u>	<u>75</u>	* <u>1180</u>	<u>207</u>	<u>49</u>	* <u>127</u>	<u>5.1</u>	<u>52</u>	<u>93</u>	<u>54</u>	<u>53</u>
11	<u>82</u>	<u>64</u>	<u>70</u>	* <u>419</u>	<u>223</u>	<u>46</u>	<u>98</u>	* <u>3.5</u>	* <u>41</u>	<u>70</u>	<u>54</u>	<u>54</u>
12	<u>94</u>	<u>81</u>	<u>73</u>	* <u>4170</u>	<u>165</u>	* <u>44</u>	<u>80</u>	<u>2.8</u>	<u>35</u>	<u>56</u>	<u>54</u>	<u>54</u>
13	<u>92</u>	* <u>86</u>	* <u>73</u>	* <u>5330</u>	<u>123</u>	<u>41</u>	<u>64</u>	<u>2.4</u>	<u>39</u>	<u>48</u>	<u>56</u>	<u>54</u>
14	<u>92</u>	<u>82</u>	<u>70</u>	* <u>2760</u>	<u>113</u>	<u>37</u>	<u>49</u>	* <u>1.7</u>	<u>51</u>	<u>58</u>	<u>56</u>	<u>55</u>
15	<u>84</u>	<u>81</u>	<u>56</u>	<u>2170</u>	* <u>113</u>	<u>35</u>	<u>41</u>	<u>1.8</u>	<u>49</u>	<u>156</u>	<u>54</u>	<u>61</u>
16	* <u>82</u>	<u>81</u>	<u>57</u>	<u>1070</u>	<u>103</u>	<u>32</u>	<u>37</u>	<u>1.3</u>	<u>50</u>	<u>188</u>	<u>53</u>	<u>71</u>
17	<u>82</u>	<u>84</u>	<u>57</u>	<u>677</u>	<u>86</u>	<u>108</u>	* <u>35</u>	<u>1.1</u>	<u>46</u>	<u>73</u>	* <u>53</u>	<u>79</u>
18	<u>81</u>	<u>86</u>	<u>59</u>	* <u>517</u>	<u>73</u>	<u>142</u>	<u>40</u>	<u>.9</u>	<u>112</u>	<u>58</u>	<u>54</u>	<u>80</u>
19	<u>79</u>	<u>84</u>	<u>56</u>	<u>408</u>	<u>62</u>	<u>106</u>	<u>45</u>	* <u>.4</u>	* <u>288</u>	<u>52</u>	<u>54</u>	<u>78</u>
20	<u>68</u>	<u>81</u>	<u>52</u>	<u>561</u>	<u>100</u>	<u>84</u>	<u>57</u>	<u>.2</u>	<u>132</u>	<u>50</u>	<u>53</u>	<u>76</u>
21	<u>100</u>	<u>79</u>	<u>61</u>	* <u>1150</u>	<u>266</u>	<u>65</u>	<u>60</u>	* <u>.2</u>	<u>86</u>	<u>46</u>	<u>53</u>	<u>75</u>
22	<u>82</u>	<u>75</u>	<u>62</u>	<u>486</u>	<u>126</u>	<u>108</u>	<u>50</u>	<u>.1</u>	<u>76</u>	<u>43</u>	<u>53</u>	<u>72</u>
23	<u>84</u>	<u>79</u>	<u>100</u>	<u>364</u>	<u>106</u>	<u>105</u>	<u>38</u>	<u>.1</u>	<u>71</u>	<u>42</u>	<u>53</u>	<u>71</u>
24	<u>86</u>	<u>81</u>	<u>113</u>	<u>453</u>	<u>84</u>	<u>76</u>	<u>34</u>	<u>74</u>	<u>196</u>	<u>41</u>	<u>54</u>	<u>71</u>
25	<u>79</u>	<u>81</u>	<u>131</u>	<u>478</u>	<u>76</u>	<u>68</u>	* <u>39</u>	* <u>137</u>	* <u>192</u>	<u>39</u>	<u>55</u>	<u>75</u>
26	<u>79</u>	<u>84</u>	* <u>443</u>	<u>427</u>	<u>70</u>	* <u>329</u>	<u>29</u>	<u>94</u>	<u>220</u>	<u>35</u>	<u>55</u>	<u>71</u>
27	<u>79</u>	* <u>88</u>	<u>214</u>	<u>225</u>	<u>62</u>	<u>179</u>	<u>29</u>	<u>62</u>	* <u>309</u>	<u>35</u>	<u>55</u>	<u>70</u>
28	<u>94</u>	<u>88</u>	<u>123</u>	<u>141</u>	<u>61</u>	<u>87</u>	<u>40</u>	<u>44</u>	<u>227</u>	<u>35</u>	<u>55</u>	<u>70</u>
29	<u>94</u>	-----	<u>118</u>	<u>137</u>	* <u>72</u>	<u>98</u>	<u>65</u>	<u>35</u>	<u>159</u>	<u>35</u>	<u>55</u>	<u>69</u>
30	* <u>92</u>	-----	<u>128</u>	<u>137</u>	<u>92</u>	<u>416</u>	<u>45</u>	<u>25</u>	<u>288</u>	<u>41</u>	<u>55</u>	<u>70</u>
31	<u>90</u>	-----	<u>121</u>	-----	<u>153</u>	-----	<u>30</u>	<u>20</u>	-----	<u>64</u>	-----	<u>74</u>
MEAN	<u>89</u>	<u>86</u>	<u>95</u>	<u>803</u>	<u>158</u>	<u>97</u>	<u>101</u>	<u>22</u>	<u>121</u>	<u>97</u>	<u>57</u>	<u>65</u>
INCHES	.021	.019	.023	.187	.038	.023	.024	.005	.028	.023	.013	.019
NOTES: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .000007776. TO CONVERT DISCHARGE IN INCHES TO AC-FT, MULTIPLY BY 255,100. YEARLY MEAN DISCHARGE, 148 CFS. YEARLY DISCHARGE, .420 INCHES. MAXIMUM AND MINIMUM FLOWS EACH MONTH UNDERLINED. * DISCHARGE MEASUREMENTS.												

CLIMATOLOGICAL DATA APPLICABLE TO ENTIRE EXPERIMENTAL WATERSHED (ANADARKO TO ALEX)

1967 DAILY AIR TEMPERATURE (degrees F)																							
CHICKASHA, OKLAHOMA												CRS											
DAY	JAN		FEB		MAR		APR		MAY		JUNE		JULY		AUG		SEPT		OCT		NOV		DEC
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
1	55	25	71	38	79	39	79	65	68	42	76	65	85	72	96	77	82	51	87	60	59	43	67
2	44	33	40	32	84	50	78	64	67	38	74	60	92	69	101	70	79	57	82	60	65	36	59
3	48	21	54	31	74	44	78	61	75	46	82	57	86	69	100	76	82	56	87	66	49	31	57
4	59	23	65	26	73	35	87	67	69	54	90	65	85	69	78	71	82	62	87	69	53	28	63
5	64	23	65	28	50	37	89	64	70	59	90	69	88	68	90	73	70	57	89	67	48	31	66
6	65	26	39	19	51	33	86	63	67	49	92	70	79	64	97	74	74	64	89	67	62	33	70
7	39	20	44	18	51	17	73	60	81	46	87	68	79	64	99	77	79	59	74	52	63	28	59
8	40	14	49	29	45	12	78	63	80	54	90	71	98	72	100	80	84	64	69	49	58	36	69
9	48	12	61	28	72	28	95	61	86	55	90	73	94	76	87	70	87	63	81	46	62	51	49
10	51	22	68	25	88	56	67	59	103	70	87	70	104	74	86	65	86	60	84	49	73	47	40
11	62	18	52	27	94	49	75	59	81	59	89	72	103	73	84	64	85	61	72	50	76	42	58
12	66	28	64	20	92	52	71	60	69	56	80	68	94	74	84	53	90	66	83	53	81	38	54
13	49	28	72	36	92	56	66	55	57	51	88	69	92	68	89	52	79	71	81	59	81	45	41
14	52	26	74	50	68	48	78	50	65	48	92	73	85	58	86	62	79	67	86	57	66	40	35
15	47	28	63	28	54	35	85	54	73	42	93	70	83	60	91	66	76	65	73	55	73	36	32
16	63	30	37	23	65	30	86	66	86	48	92	69	73	65	91	66	83	67	65	43	77	46	36
17	37	19	45	23	56	33	69	53	86	53	93	68	86	65	91	67	85	66	77	39	64	39	52
18	33	11	54	18	52	35	63	49	97	61	93	67	70	64	93	65	98	69	72	43	64	37	55
19	51	12	64	38	62	51	66	55	83	62	98	70	79	68	87	67	89	69	83	45	67	34	66
20	63	27	48	26	70	45	72	65	69	50	96	72	87	65	89	66	88	68	74	45	78	40	68
21	72	47	55	14	70	35	81	56	68	51	94	69	91	69	88	69	84	63	82	43	68	34	60
22	81	49	46	23	66	42	76	49	78	48	91	62	95	70	91	61	83	57	80	58	50	32	45
23	73	50	46	24	80	53	78	43	84	52	97	69	98	71	90	65	90	56	77	61	62	31	59
24	71	42	46	16	80	57	66	41	90	58	99	68	99	72	91	64	89	63	70	43	63	38	56
25	69	34	50	18	75	56	80	60	89	63	68	61	99	75	93	63	88	66	74	37	71	37	45
26	43	28	58	46	63	48	66	47	86	66	79	63	99	77	92	64	81	58	75	45	60	37	44
27	49	20	61	35	79	44	68	38	87	65	92	70	98	74	88	62	64	48	67	37	51	36	38
28	65	24	74	25	82	54	61	52	88	68	95	71	102	72	94	57	67	42	76	40	43	36	43
29	69	37	---	---	91	53	81	60	83	65	89	70	93	69	98	68	76	47	76	48	45	38	46
30	73	32	---	---	80	63	84	50	76	63	89	70	93	64	94	65	89	56	58	41	51	44	42
31	63	37	---	---	70	62	---	---	79	61	---	---	100	69	75	58	---	---	47	44	---	---	41
AV.	57	27	56	27	71	44	76	56	79	55	89	68	91	69	91	66	82	61	76	51	63	37	52
MEAN	42.0		41.5		57.4		66.0		66.8		78.4		79.8		78.5		71.4		63.3		50.1		41.9
STA AV	50	24	53	27	64	37	75	52	81	58	89	67	95	72	91	68	83	62	77	50	64	40	51

NOTES: AVERAGE AND STATION AVERAGE ARE ROUNDED TO NEAREST DEGREE. MEAN ROUNDED TO THE NEAREST TENTH OF A DEGREE. STATION AVERAGE BASED ON RECORDS FROM SEPT. 1962 THROUGH DEC. 1967.

1967 MONTHLY EVAPORATION AND WIND

MONTH	EVAPORATION (INCHES)	TOTAL WIND (MILES)
APRIL	8.10	4467
MAY	9.78	3383
JUNE	10.66	3256
JULY	9.63	2048
AUGUST	10.07	1821
SEPTEMBER	5.50	1674
OCTOBER	6.78	3480

EVAPORATION DATA ARE BASED ON CHICKASHA EXPERIMENT STATION RECORDS PUBLISHED IN U. S. WEATHER BUREAU CLIMATOLOGICAL DATA FOR OKLAHOMA.

CHICKASHA, OKLAHOMA WATERSHED 700 AT ALEX

Revised Watershed Conditions
Land Use Inventory
1967 Survey

Watershed number	Percent cultivation in			Percent pasture and range	Percent miscellaneous ^{1/}
	Sowed crop	Row crop	Alfalfa		
110	27	6	10	33	24
111	14	4	2	72	8
121	9	13	3	53	22
131	8	4	2	71	15
100-200 ^{2/}	24	5	7	49	15
311	31	3	3	51	12
411	29	4	7	51	9
200-500 ^{2/}	33	4	7	45	11
511	21	5	3	63	8
512	5	1	4	84	6
513	5	1	2	90	2
522	12	3	3	66	16
500-600 ^{2/}	20	6	12	52	10
611	3	5	2	90	--
612	--	--	17	83	--
621	5	1	2	82	10
600-700 ^{2/}	11	9	7	66	7

^{1/} Miscellaneous category includes dense timber with little or no forage growth, farmsteads, stomp lots, farm ponds, detention reservoirs, creeks, farm roads, private roads, highways, urban developments, and rocks.

^{2/} Ungaged area between river gaging stations.

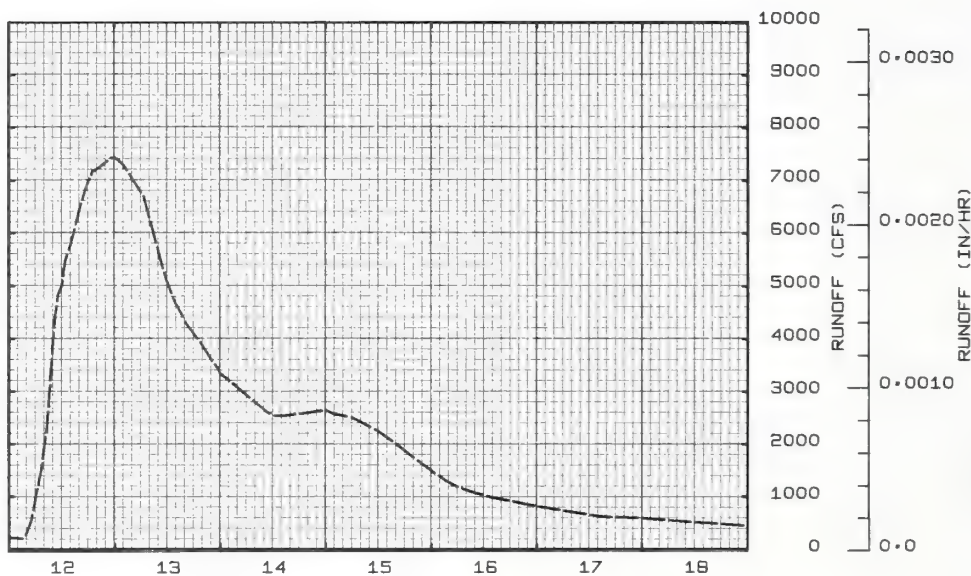
1967 . SELECTED RUNOFF EVENT			CHICKASHA, OKLAHOMA				WATERSHED 700 AT ALEX				
ANTECEDENT CONDITIONS			RAINFALL 1/				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)	
<p>Watershed conditions: The land use of this 4,783 sq. mi. watershed is not monitored seasonally. For revised watershed conditions, see p. 69.7-4, this publication.</p>			<u>Event of April 12-18, 1967</u>				4-11	2400	227.7		
			4-12	0230			197.2				
				0312			200.9				
				0342			245.4				
				0500			526.9				
				0548			825.6				
				0618			1073.3				
				0654			1311.2				
				0718			1490.2				
				0754			1678.3				
				0830			2249.6				
				0900			2778.1				
				0918			3044.6				
				0930			3389.8				
				0954			3804.8				
				1012			4218.2				
				1036			4510.5				
				1106			4816.9				
				1200			5005.9				
				1242			5468.2				
				1348			5741.9				
				1500			6117.7				
				1612			6532.5				
				1736			6902.4				
				1900			7176.8				
				1930			7187.7				
				2054			7268.5				
				2306			7428.6				
				2400			7445.0				
				4-13			0100	7375.6			
							0200	7291.6			
							0400	7044.5			
							0630	6710.6			
							0824	6128.9			
							1000	5625.6			
							1136	5140.7			
							1336	4708.0			
							1630	4260.9			
							2006	3893.2			
							2224	3431.5			
							2400	3341.3			
							4-14	0306	3127.6		
								0712	2838.7		
								1030	2620.0		
								1200	2544.1		
								1430	2535.9		
								1712	2568.1		
								2054	2610.1		
								2400	2649.2		
							4-15	0142	2577.6		
								0554	2514.7		
								0854	2340.4		
								1200	2242.5		
								1530	2037.3		
								1954	1751.2		
								2400	1497.1		
								4-16	0312	1314.3	
									0542	1200.5	
									0842	1107.9	
									1200	1024.4	
									1418	976.2	
									2400	819.5	
								4-17	1142	652.0	
									1512	517.6	
									2400	595.8	
Continued on next page											

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY .000003240. FOR 30-DAY ANTECEDENT Q, SEE P. 69.7-2, THIS PUBLICATION. 1/ NO PRECIPITATION RECORD IS SHOWN BECAUSE MOST OF THE WATERSHED LIES OUTSIDE OF THE AREA IN WHICH PRECIPITATION IS MEASURED.

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY .0000003240. FOR 30-DAY ANTECEDENT Q, SEE P. 69.7-2, THIS PUBLICATION. 1/ NO PRECIPITATION RECORD IS SHOWN BECAUSE MOST OF THE WATERSHED LIES OUTSIDE OF THE AREA IN WHICH PRECIPITATION IS MEASURED.

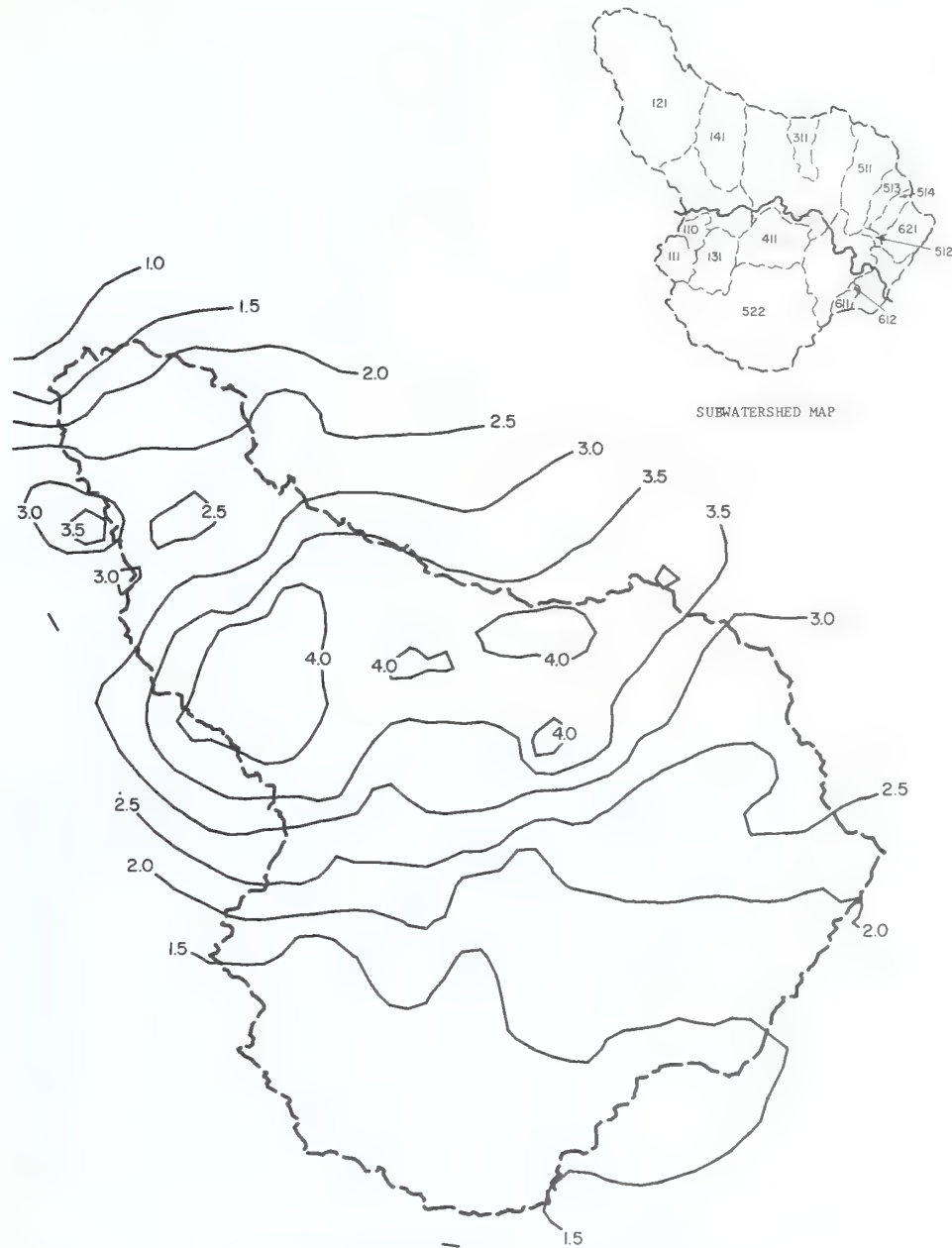
[illegible]

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY .0000003240.



APRIL 12-18, 1967

CHICKASHA, OKLAHOMA WATERSHED 700



STORM OF APRIL 12, 1967

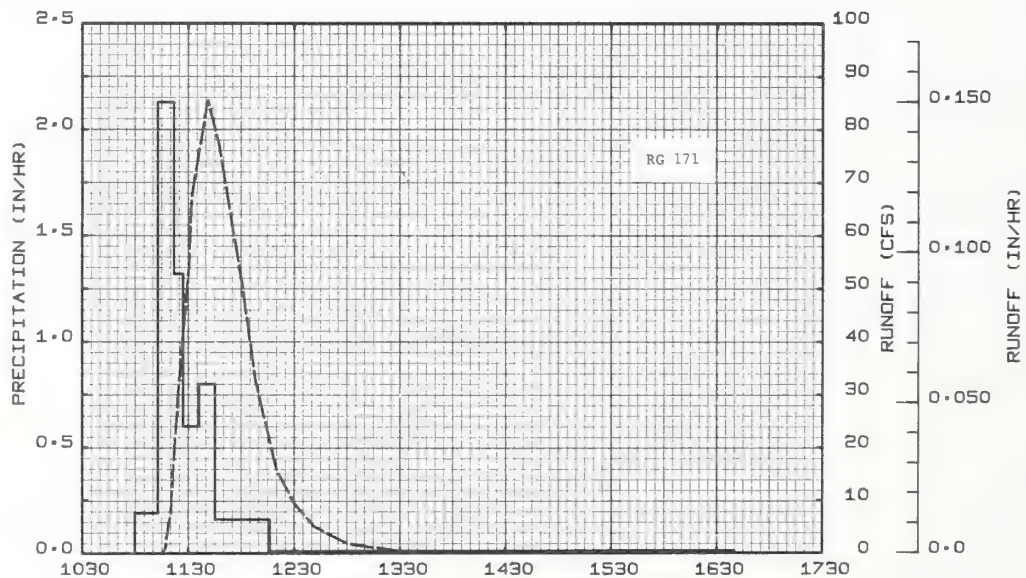
LEGEND

- WATERSHED BOUNDARY
- SUBWATERSHED BOUNDARY
- ISOHYETS (INCHES OF PRECIPITATION)

CHICKASHA, OKLAHOMA
ISOHYETAL MAP OVERLYING
ENTIRE WATERSHED

1966 SELECTED RUNOFF EVENTS				CHICKASHA, OKLAHOMA			WATERSHED 612			
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)
			Event of July 24, 1966							
Watershed conditions: The land use of this .88 sq. mi. watershed is not monitored seasonally. For a general description of the watershed cover see Hydrologic Data for Experimental Agricultural Watersheds in the United States, 1962, USDA Misc. Pub. 1070, p. 69.9-1.			7-24	RG	171		7-24	1109	.0	.0000
				1100	.00	.00		1115	.0	.0000
				1113	.19	.04		1118	.9	.0000
				1122	2.13	.36		1121	7.8	.0004
				1127	1.32	.47		1124	24.1	.0018
				1136	.60	.56				
				1145	.80	.68		1127	38.1	.0046
				1216	.16	.76		1130	52.5	.0086
				1640	.01	.79		1133	67.7	.0139
								1142	85.5	.0341
								1148	77.6	.0485
								1200	51.4	.0712
								1209	32.1	.0822
								1221	15.6	.0906
								1230	9.4	.0939
			1242	5.1	.0965					
						1300	1.8	.0983		
						1330	.4	.0933		
						1400	.1	.0995		
						1430	.0	.0995		
REPRINT										
This page was not clearly reproduced in Reference 10: Hydrologic Data for Experimental Agricultural Watersheds in the United States, 1966, USDA Misc. Pub. 1226. For other sheets in this series, see pages 69.9-1 through 69.4 of USDA Misc. Pub. 1226.										

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR MULTIPLY BY .001762. FOR 30-DAY ANTECEDENT P AND Q, SEE P. 69.9-2, THIS PUBLICATION.



JULY 24, 1966

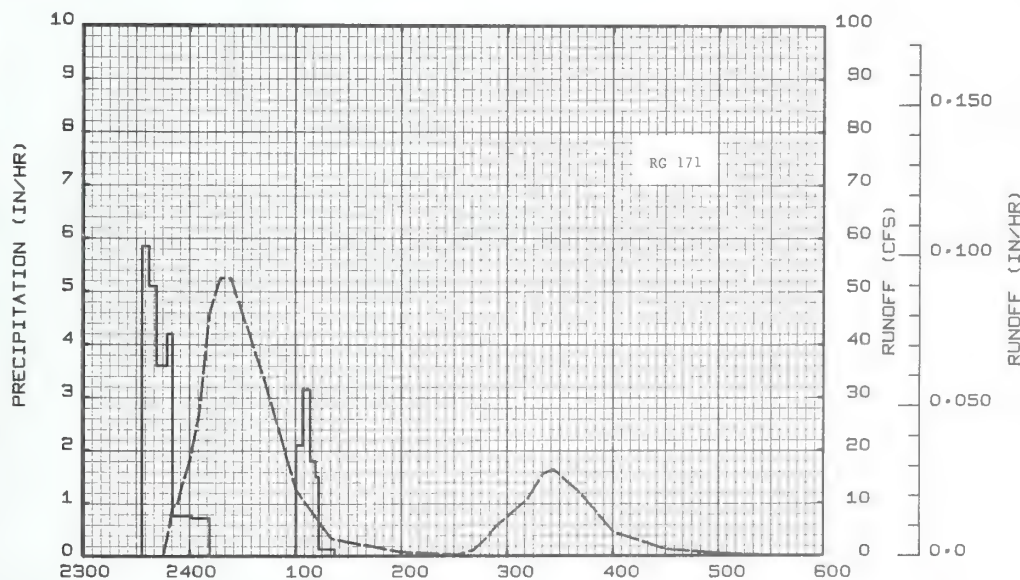
CHICKASHA, OKLAHOMA WATERSHED 612

1966 SELECTED RUNOFF EVENTS			CHICKASHA, OKLAHOMA				WATERSHED 612			
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in./hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)
Event of September 13-14, 1966										
Watershed conditions: The land use of this .88 sq. mi. watershed is not monitored seasonally. For a general description of the watershed cover see Hydrologic Data for Experimental Agricultural Watersheds in the United States, 1962, USDA Misc. Pub. 1070, p. 69.9-1.			9-13	RG	171		9-13	2345	.0	.0000
				2333	.00	.00		2348	3.3	.0001
				2337	5.85	.39		2351	9.1	.0007
				2341	5.10	.73		2354	10.0	.0015
				2347	3.60	1.09		2357	14.0	.0026
				2350	4.20	1.30				
			9-14	0001	.76	1.44	9-14	2400	18.1	.0040
				0011	.72	1.56		0006	26.8	.0080
				0100	.00	1.56		0012	46.0	.0144
				0104	2.10	1.70		0018	52.5	.0230
				0108	3.15	1.91		0024	52.5	.0323
				0111	1.80	2.00		0042	34.6	.0553
				0113	1.50	2.05		0100	12.6	.0678
				0122	.13	2.07		0121	3.3	.0727
								0200	.7	.0750
								0233	.2	.0754
			0242	1.2	.0756					
			0251	4.1	.0763					
			0254	5.5	.0767					
			0312	10.6	.0810					
			0321	15.6	.0844					
						0327	16.4	.0873		
						0342	11.9	.0935		
						0400	4.5	.0978		
						0430	1.2	.1003		
						0500	.4	.1010		
						0530	.1	.1013		

REPRINT

This page was not clearly reproduced in Reference 10: Hydrologic Data for Experimental Agricultural Watersheds in the United States, 1966, USDA Misc. Pub. 1226. For other sheets in this series, see pages 69.9-1 through 69.4 of USDA Misc. Pub. 1226.

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR MULTIPLY BY .001762. FOR 30-DAY ANTECEDENT P AND Q, SEE P. 69.9-2, THIS PUBLICATION.



SEPTEMBER 13-14, 1966

CHICKASHA, OKLAHOMA WATERSHED 612

MONTHLY PRECIPITATION AND RUNOFF (inches)						CHICKASHA, OKLAHOMA WATERSHED 612 NEAR ALEX AREA — 563 ACRES (.88 SQ. MILES)										
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	P1/ Q	.08 .000	.04 .000	2.25 .000	5.27 .241	4.28 .030	1.58 .000	2.08 .017	.53 .000	5.19 .046	3.01 .021	.41 .000	.81 .000	25.53 .355		
STA AVG	P2/ Q	.65 .130	1.02 .091	1.48 .089	3.16 .266	3.18 .106	2.95 .288	2.17 .068	2.92 .013	3.70 .125	1.48 .013	2.04 .032	.86 .159	25.61 1.380		
MEAN 67 YR	P3/ Q	1.16	1.22	1.99	3.35	4.99	3.78	2.52	2.69	3.31	2.88	1.74	1.39	31.02		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	4-12	.3011	4-12	.1333	4-12	.1444	4-12	.156	4-12	.157	4-11	.157	4-10	.207	4-9	.204
MAXIMUMS FOR PERIOD OF RECORD 4/																
19 61 TO 19 67	6-23 1963	.4014	6-23 1963	.3454	6-23 1963	.5487	6-23 1963	.733	6-23 1963	.756	6-23 1963	.756	6-23 1963	.756	6-23 1963	.785
Notes: For the revised watershed conditions, see table on p. 69.7-4 of Hydrologic Data for Experimental Agricultural Watersheds in the United States, this publication. For maps, see Hydrologic Data for Experimental Agricultural Watersheds in the United States, 1962, USDA Misc. Pub. 1070, p. 69.8-5 and Hydrologic Data for Experimental Agricultural Watersheds in the United States, 1965, p. 69.7-21 and 1962, p. 69.7-9. 1/ Precipitation data obtained from a Thiessen weighted average of 2 gages on the watershed. 2/ Precipitation records began Oct. 1961; runoff records began Nov. 1961. 3/ Mean P based on 67-yr (1901-67) U.S. Weather Bureau record period at Chickasha, Okla.; missing months estimated. 4/ Period of record began Nov. 1961.																
MISCELLANEOUS DATA																
RUNOFF PEAK DATA: YEAR (1967): Maximum — Apr. 12, 123 cfs (2.67 ft). Minimum — no flow (0.39 ft). PERIOD OF RECORD: Maximum — June 23, 1963, 231 cfs (2.26 ft). Minimum — no flow. Period of record began Nov. 14, 1961.																
DAILY TEMPERATURE: See p. 69.7-3.																

1967 DAILY PRECIPITATION (inches)						CHICKASHA, OKLAHOMA WATERSHED 612 NEAR ALEX						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.00	.04	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.25	.00	.23	.00
3	.00	.00	.00	.00	.04	.00	.80	.00	1.39	.00	.05	.00
4	.00	.00	.00	.00	.00	.00	.00	.31	.79	.00	.00	.00
5	.00	.00	.00	.00	1.24	.00	.23	.08	.90	.00	.00	.00
6	.00	.00	.04	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.23	.00	.00	.00	.00	.02	.57	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	1.38	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	1.08	.00	.00	.00	.00	.00	.00	.00	.03
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.13	1.76	.00	.06	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.46	.03	.00	.00	.00	.04	.00	.00	.03
14	.00	.00	.00	.00	.02	.00	.00	.00	.36	.00	.00	.11
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.44	.00	.04
16	.00	.00	.00	.00	.00	.00	.13	.00	.14	.00	.00	.49
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.04	.47	.00	.00	.00	.00	.00
19	.00	.00	.42	.20	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.16	1.22	.00	.00	.00	.20	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.09	.00	.00	.00
22	.00	.00	.73	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.51	.00	.00	.58	.00	.00	.00	.00	.00	.00
26	.08	.00	.04	.00	.00	.83	.00	.00	1.01	.00	.00	.00
27	.00	.00	.00	.00	.00	.07	.02	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.43	.00	.00	.00	.06	.00
29	.00	-----	.00	.00	.79	.00	.00	.00	.00	.03	.06	.00
30	.00	-----	.03	.00	.69	.00	.00	.01	.00	.69	.00	.11
31	.00	-----	.35	-----	.25	-----	.00	.13	-----	.28	-----	.00
TOTAL	.08	.04	2.25	5.27	4.28	1.58	2.08	.53	5.19	3.01	.41	.81
STA AV	.65	1.02	1.48	3.16	3.18	2.95	2.17	2.92	3.70	1.48	2.04	.86

NOTES

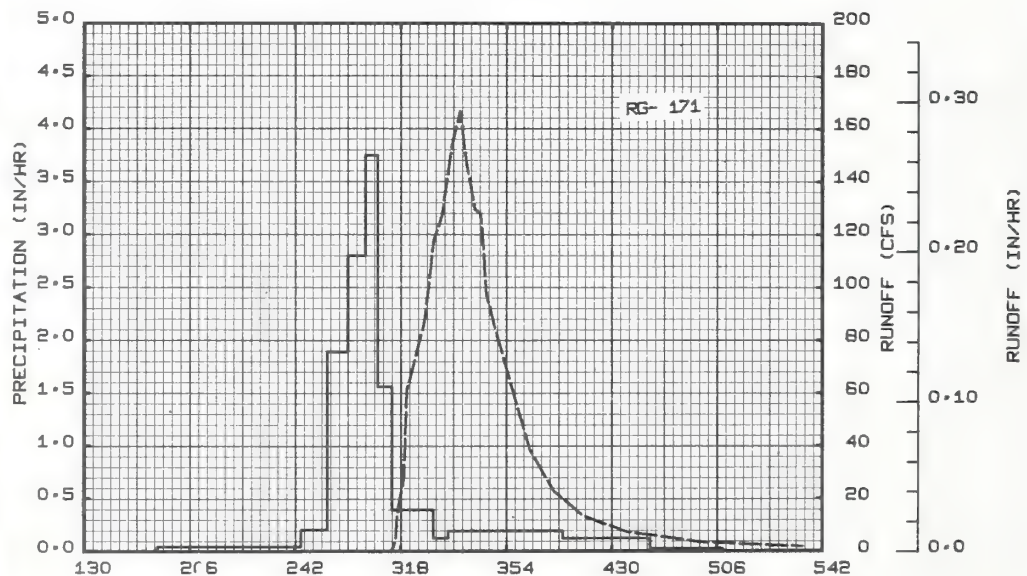
YEARLY PRECIPITATION 25.53 INCHES. PRECIPITATION VALUES ARE A THIESSEN WEIGHTED AVERAGE OF 2 GAGES ON THE WATERSHED.

1967 MEAN DAILY DISCHARGE (cfs)						CHICKASHA, OKLAHOMA WATERSHED 612 NEAR ALEX						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3	.0	.0	.0	.0	.0	.0	.0	.0	.3	.0	.0	.0
4	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0
5	.0	.0	.0	.0	.5	.0	.0	.0	.6	.0	.0	.0
6	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
7	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0
10	.0	.0	.0	1.4	.0	.0	.0	.0	.0	.0	.0	.0
11	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12	.0	.0	.0	3.8	.0	.0	.0	.0	.0	.0	.0	.0
13	.0	.0	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0
14	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
15	.0	.0	.0	.0	.0	.0	.0	.0	.0	.5	.0	.0
16	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
17	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
18	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
19	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
20	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0
21	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
22	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
23	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
24	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
25	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
26	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0
27	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
28	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
29	.0	-----	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
30	.0	-----	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
31	.0	-----	.0	-----	.0	-----	.0	.0	-----	.0	-----	.0
MEAN	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0
INCHES	.000	.000	.000	.24	.030	.000	.017	.000	.046	.021	.000	.000

NOTES: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .04228. TO CONVERT DISCHARGE IN INCHES TO AC-FT, MULTIPLY BY 46.92. YEARLY MEAN DISCHARGE, .0 CFS. YEARLY DISCHARGE, .355 INCHES. MAXIMUM AND MINIMUM FLOWS EACH MONTH UNDERLINED. * DISCHARGE MEASUREMENTS.

1967			SELECTED RUNOFF EVENT				CHICKASHA, OKLAHOMA				WATERSHED 612 NEAR ALEX			
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF							
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)				
<u>Event of April 12, 1967</u>														
Watershed conditions: The land use of this .88 sq. mi. watershed is not monitored seasonally. For revised watershed conditions, see p. 69.7-4, this publication.			4-12	RG	171		4-12							
				0155	.00	.00		0314	.0	.0000				
				02-4	.04	.03		0315	.2	.0000				
				0253	.20	.06		0316	3.4	.0001				
				0300	1.59	.28		0317	15.6	.0004				
				0306	2.80	.56		0319	28.3	.0016				
				0310	3.75	.81		0321	61.0	.0039				
				0315	1.56	.94		0327	86.9	.0169				
				0329	.29	1.23		0329	117.5	.0241				
				0334	.12	1.04		0333	127.9	.0371				
				0413	.19	1.16		0335	152.3	.0470				
				0443	.12	1.22		0338	166.7	.0610				
				0508	.02	1.23		0340	148.4	.0694				
								0343	129.6	.0816				
								0345	127.9	.0884				
								0347	96.9	.0963				

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY .001762. FOR 30-DAY ANTECEDENT P AND Q, SEE P. 69.9-2. FOR ISOHYETAL MAP, SEE P. 69.7-7, THIS PUBLICATION.



APRIL 12, 1967

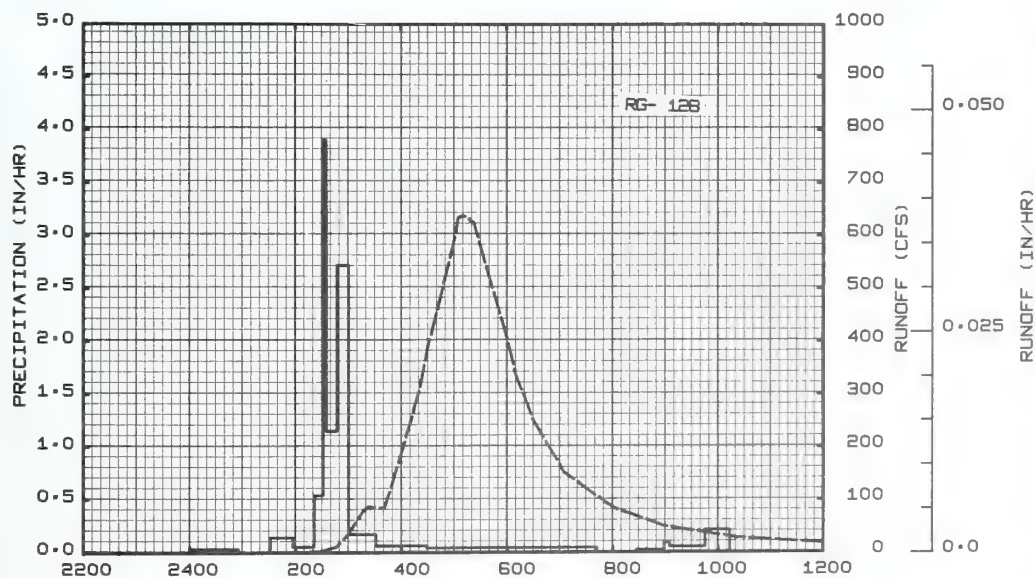
CHICKASHA, OKLAHOMA WATERSHED 612

MONTHLY PRECIPITATION AND RUNOFF (inches)							CHICKASHA, OKLAHOMA WATERSHED 111 NEAR ANADARKO AREA — 16,634 ACRES (26.0 SQ. MILES)									
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	P1/ Q	.43 .047	.08 .042	1.49 .061	4.52 .230	2.68 .054	1.68 .014	3.12 .014	1.17 .000	4.93 .015	2.90 .019	.27 .015	1.12 .026	24.39 .537		
STA AVG	P2/ Q	.48 .091	.95 .094	1.17 .104	2.75 .154	3.39 .159	3.16 .057	1.76 .042	2.64 .022	3.76 .068	1.45 .030	1.97 .082	.81 .072	24.29 .975		
MEAN 67 YR	P3/ Q	1.16	1.22	1.99	3.35	4.99	3.78	2.52	2.69	3.31	2.88	1.74	1.39	31.02		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		5 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	4-12	.0381	4-12	.0338	4-12	.0554	4-12	.080	4-12	.087	4-12	.094	4-12	.114	4-9	.180
MAXIMUMS FOR PERIOD OF RECORD 4/																
19 62 TO 1967	5-10 1964	.0460	5-10 1964	.0439	5-10 1964	.0796	5-10 1964	.135	5-10 1964	.149	5-9 1964	.234	5-9 1964	.295	5-9 1964	.320
Notes: For the revised watershed conditions, see table on p. 69.7-4 of Hydrologic Data for Experimental Agricultural Watersheds in the United States, this publication. For maps, see Hydrologic Data for Experimental Agricultural Watersheds in the United States, 1965, p. 69.7-21 and 1962, p. 69.7-9, (Geologic) and p. 69.10-4 (Topography). 1/ Precipitation data obtained from a Thiessen weighted average of 6 gages on the watershed. 2/ Precipitation records began Oct. 1961; runoff records began June 1962. 3/ Mean P based on 67-yr (1901-67) U.S. Weather Bureau record period at Chickasha, Okla.; missing months estimated. 4/ Period of record began June 1962.																
MISCELLANEOUS DATA																
RUNOFF PEAK DATA: YEAR (1967): Maximum — Apr. 12, 639 cfs (5.12 ft). Minimum — June 24, no flow (1.00 ft). PERIOD OF RECORD: Maximum — May 10, 1964, 772 cfs (5.75 ft). Minimum — no flow. Period of record began June 27, 1962. PEAK DISCHARGES: (Above base flow of 400 cfs) 1967 — Apr. 12, 639 cfs (5.12 ft).																
DAILY TEMPERATURE: See p. 69.7-3.																

1967 DAILY PRECIPITATION (inches)						CHICKASHA, OKLAHOMA WATERSHED 111 NEAR ANADARKO						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.00	.05	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.18	.00	.19	.00
3	.00	.00	.00	.00	.00	.00	1.17	.00	1.25	.00	.01	.00
4	.00	.00	.00	.00	.00	.00	.00	.31	.17	.00	.00	.09
5	.00	.00	.00	.00	.87	.00	.16	.00	.97	.00	.00	.00
6	.00	.00	.04	.00	.00	.00	.00	.00	.04	.00	.00	.00
7	.00	.00	.00	.18	.00	.00	.00	.00	.01	1.44	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	1.29	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.54	.00	.00	.00	.00	.00	.00	.00	.17
11	.00	.01	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00
12	.00	.00	.01	1.70	.00	.14	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.46	.05	.00	.00	.00	.35	.00	.00	.03
14	.00	.00	.00	.00	.02	.00	.00	.04	.53	.00	.00	.06
15	.00	.00	.00	.00	.00	.00	.02	.00	.00	.11	.00	.07
16	.00	.00	.00	.00	.00	.00	.06	.00	.01	.00	.00	.53
17	.00	.00	.00	.00	.00	.01	.00	.13	.00	.00	.00	.01
18	.00	.00	.00	.00	.00	.20	.89	.00	.00	.00	.00	.00
19	.00	.00	.49	.14	.05	.00	.10	.00	.00	.00	.00	.00
20	.00	.00	.00	.21	.71	.00	.00	.03	.43	.00	.00	.00
21	.00	.00	.00	.00	.00	.01	.00	.00	.04	.00	.00	.00
22	.00	.00	.54	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.12	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.37	.00	.00	.00	.00
25	.43	.00	.19	.00	.00	.55	.00	.00	.00	.00	.00	.00
26	.00	.00	.04	.00	.00	.62	.00	.01	.95	.00	.00	.00
27	.00	.02	.00	.00	.00	.02	.02	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.70	.00	.00	.00	.05	.00
29	.00	-----	.00	.00	.26	.00	.00	.00	.00	.00	.02	.00
30	.00	-----	.01	.00	.47	.00	.00	.00	.00	.95	.00	.16
31	.00	-----	.17	-----	.25	-----	.00	.28	.40	-----	-----	.00
TOTAL	.43	.08	1.49	4.52	2.68	1.68	3.12	1.17	4.93	2.90	.27	1.12
STAAV	.48	.95	1.17	2.75	3.39	3.16	1.76	2.64	3.76	1.45	1.97	.81
NOTES YEARLY PRECIPITATION 24.39 INCHES. PRECIPITATION VALUES ARE A THIESSEN WEIGHTED AVERAGE OF 6 GAGES ON THE WATERSHED.												
1967 MEAN DAILY DISCHARGE (cfs)						CHICKASHA, OKLAHOMA WATERSHED 111 NEAR ANADARKO						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	1.2	1.1E	1.1	1.6	1.1	.8	.1	.0	.0	.0	.6	.5
2	.6	.9E	1.1	1.3	1.1	.8	.1	.0	.0	.0	.4	.4
3	.9	1.0E	1.1	1.2	1.1	.8	5.0	.0	.2	.0	.3	.4
4	1.1	.8E	1.1	1.2	1.1	.6	.9	.0	4.4	.0	.3	.4
5	1.1	.8E	1.1	1.2	1.4	.5	.5	.0	1.9	.0	.3	.4
6	1.1	1.0E	1.2	1.1	7.2	.4	.2	.0	1.4	.0	.3	.4
7	.9	.9	1.2	1.2	1.7	.3	.2	.0	.1	9.0	.3	.4
8	.8	1.1	1.2	1.5	1.3	.2	.2	.0	.0	.5	.3	.4
9	.9	1.1	1.2	1.4	1.1	.2	.1	.0	.0	.3	.4	.4
10	1.0	1.1	1.1	1.1	.9	.2	.0	.0	.0	.2	.4	.4
11	1.1	1.1	1.1	2.6	.9	.1	.0	.0	.0	.1	.4	.6
12	1.1	1.1	1.2	7.2	.8	.2	.0	.0	.0	.1	.4	.6
13	1.1	1.1	1.3	15	.9	.3	.0	.0	.0	.1	.4	.5
14	1.1	1.0	1.3	5.2	1.1	.2	.0	.0	.4	.1	.3	.5
15	1.1	1.0	1.2	2.8	1.1	.1	.0	.0	.3	.1	.3	.6
16	1.1	1.0	1.1	2.5	.8	.1	.0	.0	.0	.2	.3	.8
17	1.0	1.1	1.1	2.0	.7	.1	.0	.0	.0	.2	.3	1.2
18	.8	1.1	1.2	1.8	.6	.1	.4	.0	.0	.1	.3	1.0
19	.9	1.1	1.3	2.4	.5	.3	.6	.0	.0	.1	.3	.8
20	1.1	1.1	2.4	4.2	2.7	.1	.4	.0	.0	.1	.3	.7
21	1.2	1.1	1.4	2.4	1.7	.0	.2	.0	.0	.1	.3	.7
22	1.1	1.1	3.1	1.7	.9	.0	.1	.0	.0	.1	.4	.6
23	1.1	1.1	1.9	1.5	.9	.0	.0	.0	.0	.1	.4	.6
24	1.1	1.0	1.4	1.3	.7	.0	.0	.0	.0	.1	.4	.6
25	1.1	1.0	1.5	1.4	.5	.3	.0	.0	.0	.1	.4	.6
26	1.8	1.1	1.8	1.4	.4	1.8	.0	.0	.0	.1	.4	.6
27	1.3	1.1	1.4	1.3	.4	.6	.0	.0	1.3	.1	.4	.6
28	1.2	1.2	1.4	1.3	.4	.3	.5	.0	.1	.1	.4	.6
29	1.1E	-----	1.3	1.4	.7	.2	.6	.0	.1	.1	.4	.6
30	1.1E	-----	1.2	1.3	.9	.1	.0	.0	.0	.2	.4	.7
31	1.0E	-----	1.4	-----	1.7	-----	.0	.0	-----	.9	-----	.8
MEAN	1.1	1.0	1.4	5.4	1.2	.3	.3	.0	.3	.4	.4	.6
INCHES	.047	.042	.061	.230	.054	.014	.014	.000	.015	.019	.015	.026
NOTES TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .001431. TO CONVERT DISCHARGE IN INCHES TO AC-FT, MULTIPLY BY 1.386. YEARLY MEAN DISCHARGE, 1.0 CFS. YEARLY DISCHARGE, .537 INCHES. MAXIMUM AND MINIMUM FLOWS EACH MONTH UNDERLINED. * DISCHARGE MEASUREMENTS.												

1967 SELECTED RUNOFF EVENT			CHICKASHA, OKLAHOMA				WATERSHED 111 NEAR ANADARKO			
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)
Event of April 12, 1967										
			4-12	PC	12.8		4-12			
				0010	.00	.00		0218	2.0	.0000
				0110	.00	.00		0230	2.5	.0000
				0131	.00	.00		0248	11.4	.0007
				0157	.14	.14		0300	35.3	.0004
				0201	.00	.14		0318	78.7	.0014
				0231	.04	.20		0324	86.8	.0019
				0235	1.70	.40		0330	85.6	.0025
				0247	1.15	.59		0342	84.4	.0035
				0300	2.72	1.25		0354	149.1	.0049
				0331	.17	1.37		0412	249.5	.0084
				0409	.06	1.43		0424	323.0	.0118
				0537	.04	1.47		0430	346.6	.0140
				0623	.04	1.50		0500	566.7	.0275
				0742	.04	1.55		0506	634.3	.0321
				0827	.00	1.55		0512	638.8	.0359
				0858	.02	1.56		0524	625.5	.0434
				0905	.09	1.67		0530	582.4	.0470
				0945	.00	1.68		0600	409.5	.0618
				1013	.21	1.79		0612	334.5	.0663
								0630	251.9	.0715
								0706	152.5	.0787
								0800	85.6	.0851
								0900	49.5	.0892
								1024	27.4	.0920
								1200	18.0	.0945

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY .00005962. FOR 30-DAY ANTECEDENT P AND Q, SEE P. 69.10-2. FOR ISOHYETAL MAP, SEE P. 69.7-7, THIS PUBLICATION.



APRIL 11-12, 1967

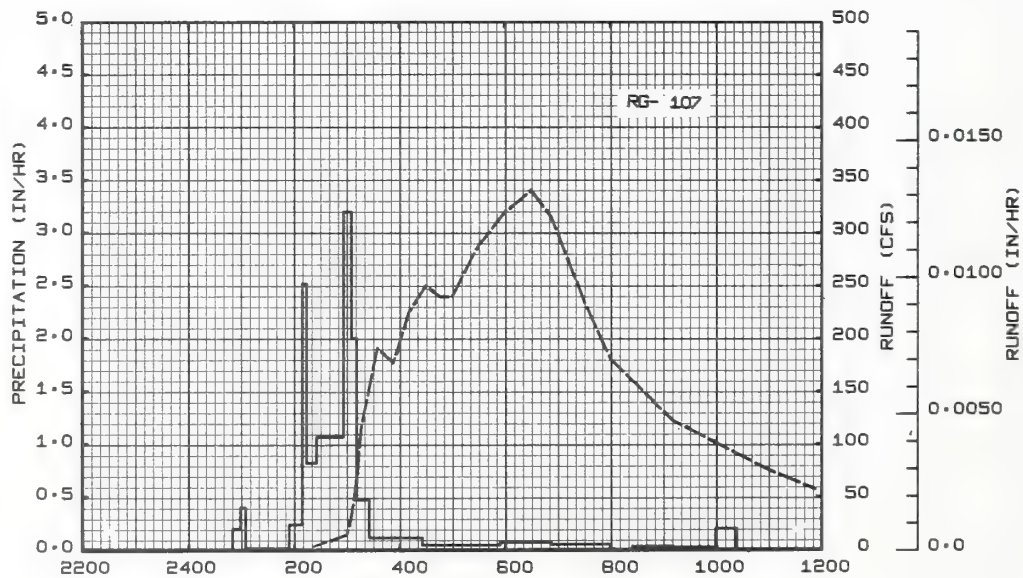
CHICKASHA, OKLAHOMA WATERSHED 111

MONTHLY PRECIPITATION AND RUNOFF (inches)							CHICKASHA, OKLAHOMA WATERSHED 131 NEAR ANADARKO AREA — 25,660 ACRES (40.1 SQ. MILES)									
MONTH YEAR		JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	P ^{1/} O	.38 .011	.07 .013	1.56 .021	5.53 .196	3.09 .028	2.43 .004	2.67 .001	1.43 .000	4.81 .008	3.03 .002	.35 .004	1.18 .015	26.53 .303		
STA AVG	P ^{2/} O	.57 .056	1.03 .066	1.18 .070	2.97 .117	3.50 .096	3.04 .018	1.85 .001	2.90 .004	3.84 .016	1.65 .011	2.29 .034	.86 .040	25.68 .529		
MEAN 67 YR	P ^{3/}	1.16	1.22	1.99	3.35	4.99	3.78	2.52	2.69	3.31	2.88	1.74	1.39	31.02		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	4-12	.0132	4-12	.0127	4-12	.0273	4-12	.052	4-12	.066	4-12	.074	4-12	.090	4-9	.134
MAXIMUMS FOR PERIOD OF RECORD 4/																
19 62 TO 1967	5-9 1965	.0177	5-9 1965	.0171	5-9 1965	.0327	5-9 1965	.078	5-9 1965	.096	5-9 1965	.106	5-9 1965	.112	5-9 1965	.135
Notes: For the revised watershed conditions, see table on p. 69.7-4, this publication. For maps, see Hydrologic Data for Experimental Agricultural Watersheds in the United States, 1962, USDA Misc. Pub. 1070, p. 69.7-9, p. 69.11-4 and Hydrologic Data for Experimental Agricultural Watersheds in the United States, 1965, p. 69.7-21. 1/ Precipitation data obtained from a Thiessen weighted average of 10 gages on the watershed. 2/ Precipitation records began Oct. 1961; runoff records began Aug. 1962. 3/ Mean P based on 67-yr (1901-67) U.S. Weather Bureau record period at Chickasha, Okla.; missing months estimated. 4/ Period of record began Aug. 1962.																
MISCELLANEOUS DATA																
RUNOFF PEAK DATA: YEAR (1967): Maximum — Apr. 12, 340 cfs (4.62 ft). Minimum — no flow (1.00 ft) June 9.																
PERIOD OF RECORD: Maximum — May 9, 1965, 459 cfs (5.06 ft). Minimum — no flow. Period of record began Aug. 15, 1962.																
PEAK DISCHARGES: (Above base flow of 400 cfs) 1967 — None.																
DAILY TEMPERATURE: See p. 69.7-3.																

1967 DAILY PRECIPITATION (inches)						CHICKASHA, OKLAHOMA WATERSHED 131 NEAR ANADARKO						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.00	.05	.00	.00	.00	.00	.00	.00	.00	.00	.02	.00
2	.00	.00	.00	.00	.00	.00	.04	.00	.22	.00	.22	.00
3	.00	.00	.00	.00	.00	.00	.50	.00	1.59	.00	.03	.00
4	.00	.00	.00	.00	.00	.00	.00	.29	.09	.00	.00	.08
5	.00	.00	.00	.00	.84	.00	.33	.00	.80	.00	.00	.00
6	.00	.00	.05	.00	.00	.00	.00	.00	.05	.00	.00	.00
7	.00	.00	.00	.21	.00	.00	.00	.00	.01	1.33	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	1.67	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.53	.00	.00	.00	.00	.00	.00	.00	.14
11	.00	.02	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	1.77	.00	.07	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.51	.04	.00	.00	.00	.16	.00	.00	.01
14	.00	.00	.00	.00	.03	.00	.00	.00	.53	.00	.00	.08
15	.00	.00	.00	.00	.00	.00	.14	.00	.00	.19	.00	.09
16	.00	.00	.00	.00	.00	.00	.08	.00	.00	.00	.00	.62
17	.00	.00	.00	.00	.00	.00	.00	.84	.00	.00	.00	.01
18	.00	.00	.00	.00	.00	.54	1.04	.00	.00	.00	.00	.00
19	.00	.00	.49	.12	.00	.00	.17	.00	.00	.00	.00	.00
20	.00	.00	.00	.72	1.07	.00	.00	.02	.29	.00	.00	.00
21	.00	.00	.00	.00	.00	.01	.00	.00	.05	.00	.00	.00
22	.00	.00	.54	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.56	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.38	.00	.13	.00	.00	.53	.00	.00	.00	.00	.00	.00
26	.00	.00	.07	.00	.00	.69	.00	.00	1.02	.00	.00	.00
27	.00	.00	.00	.00	.00	.03	.03	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.34	.00	.00	.00	.05	.00
29	.00	-----	.00	.00	.35	.00	.00	.00	.00	.00	.03	.00
30	.00	-----	.05	.00	.49	.00	.00	.00	.00	1.06	.00	.15
31	.00	-----	.23	-----	.27	-----	.00	.28	-----	.45	.00	.00
TOTAL	.38	.07	1.56	5.53	3.09	2.43	2.67	1.43	4.81	3.03	.35	1.18
STAAV	.57	1.03	1.18	2.97	3.09	3.04	1.85	2.90	3.84	1.65	2.29	.86
NOTES: YEARLY PRECIPITATION 26.53 INCHES. PRECIPITATION VALUES ARE A THIESSEN WEIGHTED AVERAGE OF 10 GAGES ON THE WATERSHED.												
1967 MEAN DAILY DISCHARGE (cfs)						CHICKASHA, OKLAHOMA WATERSHED 131 NEAR ANADARKO						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.3	.6	.6	1.0	.9	.6	.0	.0	.0	.0	.4	.1
2	.3	.6	.4	.8	.8	.5	.0	.0	.0	.0	.3	.2
3	.2	.5	.4	.7	.9	.4	.2	.0	.6	.0	.3	.2
4	.3	.5	.5	.6	.9	.3	.1	.0	4.9	.0	.2	.2
5	.3	.5	.5	.7	1.5	.1	.1	.0	.3	.0	.2	.2
6	.3	.5	.5	.5	5.4	.1	.1	.0	2.1	.0	.1	.3
7	.2	.5	.5	.6	2.2	.0	.0	.0	.1	.9	.1	.3
8	.2	.5	.3	.9	1.7	.0	.0	.0	.0	.1	.1	.3
9	.2	.5	.5	14	1.1	.0	.0	.0	.0	.0	.1	.3
10	.3	.5	.5	14	.8	.0	.0	.0	.0	.0	.1	.4
11	.3	.5	.5	3.4	.7	.0	.0	.0	.0	.0	.1	.5
12	.4	.5	.5	82	.7	.0	.0	.0	.0	.0	.1	.5
13	.4	.5	.5	19	.8	.0	.0	.0	.0	.0	.1	.6
14	.4	.4	.6	5.3	1.0	.0	.0	.0	.0	.0	.1	.6
15	.4	.4	.7	3.4	.8	.0	.0	.0	.0	.0	.1	.7
16	.4	.4	.6	3.2	.6	.0	.0	.0	.0	.0	.1	.8
17	.3	.5	.7	2.3	.5	.0	.0	.0	.0	.0	.1	1.0
18	.2	.5	.7	2.1	.3	.1	.1	.0	.0	.0	.1	.9
19	.2	.5	1.1	2.4	.2	.0	.2	.0	.0	.0	.1	.8
20	.4	.5	1.8	33	1.2	.0	.0	.0	.0	.0	.1	.8
21	.6	.5	.8	7.7	1.7	.0	.0	.0	.0	.0	.1	.7
22	.5	.6	1.0	1.9	.9	.0	.0	.0	.0	.0	.1	.7
23	.5	.5	1.4	1.9	.7	.4	.0	.0	.0	.0	.1	.6
24	.5	.5	.8	1.5	.5	1.0	.0	.0	.0	.0	.1	.5
25	.5	.5	.9	1.7	.3	.1	.0	.0	.0	.0	.1	.5
26	.8	.5	1.2	1.5	.2	.9	.0	.0	.0	.0	.1	.4
27	.5	.6	.8	1.3	.3	.2	.0	.0	.9	.0	.1	.5
28	.5	.5	.7	1.4	.2	.0	.0	.0	.0	.0	.1	.6
29	.5	-----	.7	1.5	.3	.0	.0	.0	.0	.0	.1	.6
30	.5	-----	.7	1.2	.5	.0	.0	.0	.0	.0	.1	.7
31	.5	-----	.8	-----	1.5	-----	.0	.0	-----	1.0	-----	.7
MEAN	.4	.5	.7	7.1	1.0	.2	.0	.0	.3	.1	.1	.5
INCHES	.011	.013	.021	.196	.028	.004	.001	.000	.008	.002	.004	.015
NOTES: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .0009276. TO CONVERT DISCHARGE IN INCHES TO AC-FT, MULTIPLY BY 2.138. YEARLY MEAN DISCHARGE, .9 CFS. YEARLY DISCHARGE, .03 INCHES. MAXIMUM AND MINIMUM FLOWS EACH MONTH UNDERLINED. * DISCHARGE MEASUREMENTS.												

1967 SELECTED RUNOFF EVENT			CHICKASHA, OKLAHOMA				WATERSHED 131 NEAR ANADARKO			
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)
Watershed conditions: The land use of this 40.1 sq. mi. watershed is not monitored seasonally. For revised watershed conditions, see p. 69.7-4, this publication.			Event of April 12, 1967							
			4-12	RG	1.07		4-12			
				0350	.00	.00		0224	3.4	.0000
				0059	.20	.03		0300	14.5	.0002
				0105	.40	.07		0306	29.9	.0003
				0214	2.52	.35		0312	65.0	.0005
				0225	.82	.50		0318	119.2	.0008
				0256	1.07	1.05		0330	171.8	.0020
				0305	3.20	1.53		0336	190.9	.0027
				0311	2.00	1.73		0354	176.9	.0048
				0325	.47	1.84		0412	225.2	.0071
				0426	.11	1.95		0430	250.0	.0099
				0554	.04	2.01		0448	239.5	.0127
				0652	.07	2.08		0500	239.5	.0146
				0759	.05	2.13		0530	288.2	.0197
				0824	.00	2.13		0600	319.8	.0255
				0910	.03	2.15		0630	340.3	.0319
				0959	.02	2.17		0654	314.8	.0370
				1023	.20	2.25		0730	235.3	.0434
								0800	180.3	.0474
								0912	121.9	.0544
								1100	75.3	.0612
								1154	57.2	.0635

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY .00003865. FOR 30-DAY ANTECEDENT P AND Q, SEE P. 69.11-2. FOR ISOHYETAL MAP, SEE P. 69.7-7, THIS PUBLICATION.



APRIL 11-12, 1967

CHICKASHA, OKLAHOMA WATERSHED 131

MONTHLY PRECIPITATION AND RUNOFF (inches)						CHICKASHA, OKLAHOMA WATERSHED 411 AT CHICKASHA AREA — 33,300 ACRES (52.0 SQ. MILES)										
MONTH YEAR		JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	P 1/ Q	.19 .000	.05 .000	1.62 .000	5.84 .280	3.27 .008	2.01 .001	2.47 .001	1.22 .003	5.01 .018	2.44 .006	.29 .000	1.00 .000	25.41 .317		
STA AVG	P 2/ Q	.53 .003	.95 .005	1.18 .006	2.86 .085	2.98 .026	3.13 .031	1.76 .012	3.18 .070	3.80 .037	1.32 .002	2.15 .041	.88 .008	24.72 .326		
MEAN 67 YR	P 3/	1.16	1.22	1.99	3.35	4.99	3.78	2.52	2.69	3.31	2.88	1.74	1.39	31.02		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	4-12	.0259	4-12	.0255	4-12	.0491	4-12	.105	4-12	.141	4-12	.182	4-12	.212	4-9	.240
MAXIMUMS FOR PERIOD OF RECORD 4/																
19 62 TO 19 67	8-28 1965	.0598	8-28 1965	.0532	8-28 1965	.0962	8-28 1965	.204	8-28 1965	.274	8-28 1965	.302	8-28 1965	.316	8-27 1965	.318
Notes: For the revised watershed conditions, see table on p. 69.7-4, this publication. For maps, see Hydrologic Data for Experimental Agricultural Watersheds in the United States, 1962, USDA Misc. Pub. 1070, p. 69.12-4, p. 69.7-9 and Hydrologic Data for Experimental Agricultural Watersheds in the United States, 1965, p. 69.7-21. 1/ Precipitation data obtained from a Thiessen weighted average of 13 gages on the watershed. 2/ Precipitation records began Oct. 1961; runoff records began Sept. 1962. 3/ Mean P based on 67-yr (1901-67) U.S. Weather Bureau record period at Chickasha, Okla.; missing months estimated. 4/ Period of record began Sept. 1962.																
MISCELLANEOUS DATA																
RUNOFF PEAK DATA: YEAR (1967): Maximum — Apr. 12, 869 cfs (17.29 ft). Minimum — Jan. 1, no flow (10.00 ft). PERIOD OF RECORD: Maximum — Aug. 28, 1965, 2,008 cfs (19.45 ft). Minimum — no flow. Period of record began Sept. 1, 1962. PEAK DISCHARGES: (Above base flow of 400 cfs) 1967 — Apr. 12, 869 cfs (17.29 ft).																
DAILY TEMPERATURE: See p. 69.7-3.																

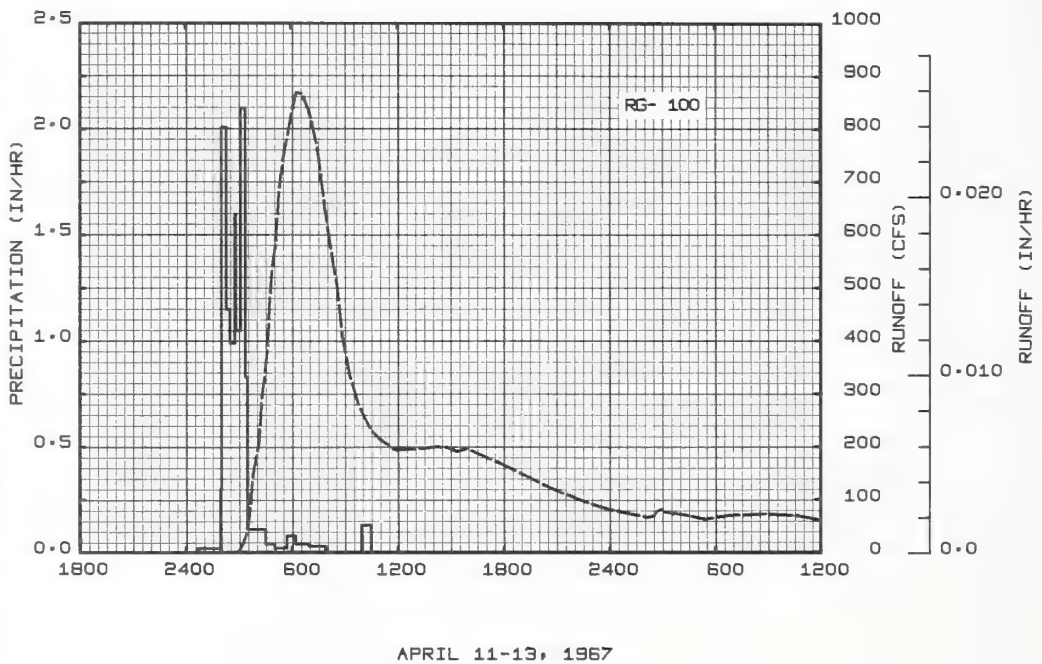
1967 DAILY PRECIPITATION (inches)						CHICKASHA, OKLAHOMA WATERSHED 411 AT CHICKASHA						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.00	.05	.00	.01	.00	.00	.00	.00	.00	.00	.01	.00
2	.00	.00	.00	.00	.00	.00	.01	.00	.66	.00	.19	.00
3	.00	.00	.00	.00	.00	.00	.49	.00	1.28	.00	.03	.00
4	.00	.00	.00	.00	.00	.00	.00	.38	.11	.00	.00	.05
5	.00	.00	.00	.00	.88	.00	.48	.01	.43	.00	.00	.00
6	.00	.00	.03	.00	.00	.00	.00	.00	.06	.00	.00	.00
7	.00	.00	.00	.22	.00	.00	.00	.00	.00	1.07	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	1.37	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.75	.00	.00	.00	.00	.00	.00	.00	.05
11	.00	.00	.00	.00	.00	.09	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	1.99	.00	.02	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.46	.04	.00	.00	.00	.17	.00	.00	.04
14	.00	.00	.00	.00	.03	.00	.00	.00	.46	.00	.00	.09
15	.00	.00	.00	.00	.00	.00	.14	.00	.00	.27	.00	.09
16	.00	.00	.00	.00	.00	.00	.10	.00	.01	.00	.00	.52
17	.00	.00	.00	.00	.00	.16	.00	.51	.00	.00	.00	.01
18	.00	.00	.00	.00	.00	.01	.89	.00	.00	.00	.00	.00
19	.00	.00	.39	.29	.00	.00	.10	.00	.00	.00	.00	.00
20	.00	.00	.00	.75	1.14	.00	.00	.01	.46	.00	.00	.00
21	.00	.00	.00	.00	.00	.01	.00	.00	.09	.00	.00	.00
22	.00	.00	.53	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.17	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.13	.00	.16	.00	.00	.73	.00	.00	.00	.00	.00	.00
26	.06	.00	.11	.00	.00	.80	.00	.00	1.28	.00	.00	.00
27	.00	.00	.00	.00	.00	.02	.01	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.01	.00	.25	.00	.00	.00	.02	.00
29	.00	-----	.00	.00	.47	.00	.00	.00	.00	.00	.04	.00
30	.00	-----	.11	.00	.50	.00	.00	.00	.00	.68	.00	.15
31	.00	-----	.29	-----	.20	-----	.00	.31	-----	.42	-----	.00
TOTAL	.19	.05	1.62	5.84	3.27	2.01	2.47	1.22	5.01	2.44	.29	1.00
STA. AV.	.53	.95	1.18	2.86	2.98	3.13	1.76	3.18	3.80	1.32	2.15	.88

NOTES: YEARLY PRECIPITATION 25.41 INCHES. PRECIPITATION VALUES ARE A THIESSEN WEIGHTED AVERAGE OF 13 GAGES ON THE WATERSHED.

1967 MEAN DAILY DISCHARGE (cfs)						CHICKASHA, OKLAHOMA WATERSHED 411 AT CHICKASHA						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2	.0	.0	.0	.0	.0	.0	.0	.0	.7	.0	.0	.0
3	.0	.0	.0	.0	.0	.0	.6	.0	.6	.0	.1	.0
4	.0	.0	.0	.0	.0	.0	.0	.0	6.0	.0	.0	.0
5	.0	.0	.0	.0	.8	.0	.2	.0	2.2	.0	.0	.0
6	.0	.0	.0	.0	1.7	.0	.0	.0	.1	.0	.0	.0
7	.0	.0	.0	.0	.0	.0	.0	.0	.0	4.9	.0	.0
8	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.1	.0	.0
9	.0	.0	.0	2.7	.0	.0	.0	.0	.0	.1	.0	.0
10	.0	.0	.0	* 41	.0	.0	.0	.0	.0	.0	.0	.0
11	.0	.0	.0	1.5	.0	.0	.0	.0	.0	.0	.0	.0
12	.0	.0	.0	* 24.4	.0	.0	.0	.0	.0	.0	.0	.0
13	.0	.0	.0	51	.0	.0	.0	.0	.0	.0	.0	.0
14	.0	.0	.0	4.0	.0	.0	.0	.0	.3	.0	.0	.0
15	.0	.0	.0	.0	.0	.0	.0	.0	.0	.3	.0	.0
16	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.3
17	.0	.0	.0	.0	.0	.0	.0	* 4.9	.0	.0	.0	.3
18	.0	.0	.0	.0	.0	.0	.3	.1	.0	.0	.0	.0
19	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
20	.0	.0	.0	* 47	5.8	.0	.0	.0	.0	.0	.0	.0
21	.0	.0	.0	* 10	1.7	.0	.0	.0	.0	.0	.0	.0
22	.0	.0	.0	.1	.5	.1	.0	.0	.0	.0	.0	.0
23	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
24	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
25	.0	.0	.4	.0	.0	.3	.0	.0	.0	.0	.0	.0
26	.0	.0	.0	.0	.0	1.3	.0	.0	1.5	.0	.0	.0
27	.0	.0	.0	.0	.0	.0	.0	.0	1.3	.0	.0	.0
28	.0	.0	.0	.0	.0	.0	.6	.0	1.2	.0	.0	.0
29	.0	-----	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0
30	.0	-----	.0	.0	.3	.0	.0	.0	.0	.3	.0	.0
31	.0	-----	.2	-----	.2	-----	.0	.0	.6	-----	.0	.0
MEAN	.0	.0	.0	13	.3	.1	.1	.2	.9	.3	.0	.0
INCHES	.000	.000	.000	.280	.008	.001	.001	.003	.018	.006	.000	.000

NOTES TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .0007148. TO CONVERT DISCHARGE IN INCHES TO AC-FT, MULTIPLY BY 2.775. YEARLY MEAN DISCHARGE, 1.2 CFS. YEARLY DISCHARGE, .317 INCHES. MAXIMUM AND MINIMUM FLOWS EACH MONTH UNDERLINED. * DISCHARGE MEASUREMENTS.

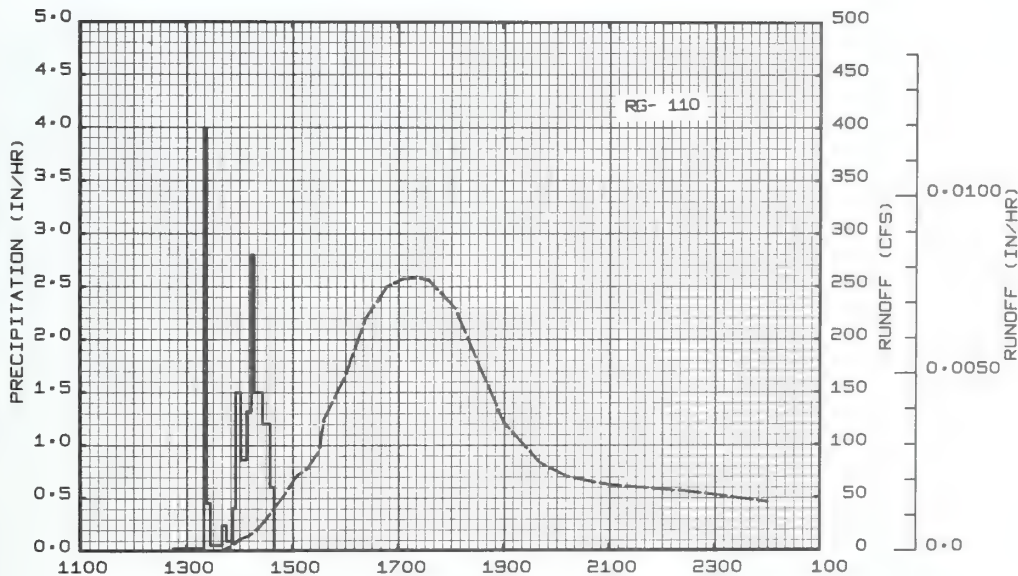
1967 SELECTED RUNOFF EVENTS			CHICKASHA, OKLAHOMA				WATERSHED 411 AT CHICKASHA			
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)
Watershed conditions: The land use of this 52 sq. mi. watershed is not monitored seasonally. For revised watershed conditions, see p. 69.7-4, this publication.			Event of April 12, 1967							
			4-12	0000	1.00	.00	4-12	0000	.0	.0000
				0040	.00	.00		0040	.0	.0000
				0100	.02	.02		0100	1.5	.0002
				0200	.30	.15		0200	18.2	.0015
				0210	2.01	.02		0210	41.5	.0002
				0230	1.15	.05		0230	41.5	.0005
				0240	.97	1.13		0340	54.2	.0017
				0250	1.60	1.21		0340	137.6	.0010
				0300	1.05	1.49		0354	157.0	.0024
				0310	2.10	1.5		0410	212.3	.0032
				0320	.85	2.16		0418	279.4	.0035
				0430	.11	2.27		0430	358.5	.0037
				0500	.04	2.79		0442	414.6	.0039
				0540	.02	2.30		0448	483.6	.0092
				0610	.08	2.34		0454	530.1	.0105
				0710	.04	2.37		0500	575.9	.0100
				0750	.03	2.40		0518	621.1	.0117
				0957	.01	2.40		0556	754.1	.0242
				1030	.13	2.47		0600	800.3	.0250
								0618	869.1	.0212
								0630	868.4	.0400
								0642	859.6	.0411
								0700	835.2	.0591
								0730	757.6	.0710
								0754	649.8	.0794
								0810	562.3	.0880
								0836	505.5	.0910
								0854	409.3	.0950
								0910	337.8	.0980
								0948	278.9	.1045
								1030	200.7	.1075
						4-13	1100	214.4	.1131	
							1142	197.1	.1174	
							1200	194.3	.1112	
							1324	197.2	.1273	
							1418	199.6	.1327	
							1454	198.2	.1412	
							1512	193.2	.1410	
							1524	191.2	.1391	
							1554	195.6	.1420	
							1624	189.3	.1448	
							1742	169.7	.1519	
							2018	127.5	.1633	
							2154	104.7	.1655	
							2318	87.7	.1728	
							2400	81.0	.1746	
						4-13	0148	69.4	.1750	
							0206	66.5	.1792	
							0224	67.6	.1798	
							0230	69.3	.1800	
							0242	78.1	.1805	
							0254	81.2	.1810	
							0300	81.5	.1812	
							0312	76.0	.1817	
							0342	74.5	.1825	
							0418	70.0	.1841	
							0512	64.5	.1855	
							0530	63.2	.1855	
							0542	64.2	.1869	
							0610	66.3	.1876	
							0648	69.8	.1890	
						4-13	0742	71.1	.1909	
							0848	72.6	.1933	
							0948	71.0	.1954	
							1042	68.8	.1973	
							1148	62.5	.1995	
NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY .00002978. FOR 30 DAY ANTECEDENT P AND Q, SEE P. 69.12-2. FOR ISOHYETAL MAP, SEE P. 69.7-7, THIS PUBLICATION.							1242	57.1	.2011	
							1330	52.1	.2024	
							1500	41.8	.2045	
							1630	33.8	.2061	



CHICKASHA, OKLAHOMA WATERSHED 411

1967 SELECTED RUNOFF EVENTS			CHICKASHA, OKLAHOMA				WATERSHED 411 AT CHICKASHA			
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)
<p>Watershed conditions: The land use of this 52 sq. mi. watershed is not monitored seasonally. For revised watershed conditions, see p. 69.7-4, this publication.</p>			Event of April 20, 1967							
			4-20	70	1.10		4-20			
				1245	.00	.00		1342	.0	.0000
				1320	.02	.01		1354	6.1	.0000
				1323	4.00	.21		1400	10.7	.0000
				1327	.45	.24		1412	14.2	.0001
				1340	.09	.25		1424	22.4	.0002
				1345	.24	.27		1448	46.4	.0008
				1352	.09	.28		1506	71.2	.0018
				1355	.40	.30		1518	78.0	.0018
				1401	1.50	.45		1530	94.7	.0020
				1408	.86	.55		1536	123.5	.0025
				1413	1.32	.66		1600	186.7	.0042
				1416	2.80	.80		1624	222.2	.0065
				1426	1.50	1.05		1648	249.9	.0099
				1434	1.20	1.21		1706	257.5	.0116
				1439	.60	1.26		1724	258.1	.0139
								1736	256.0	.0154
								1806	229.0	.0190
								1836	170.5	.0220
								1900	121.6	.0237
								1942	83.4	.0259
								2012	70.3	.0278
								2100	61.9	.0286
								2230	55.6	.0312
								2400	45.7	.0335
							4-21	0130	34.7	.0353

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY .00002978. FOR 30-DAY ANTECEDENT P AND Q, SEE P. 69.12-2, THIS PUBLICATION.



APRIL 20-21, 1967

CHICKASHA, OKLAHOMA WATERSHED 411

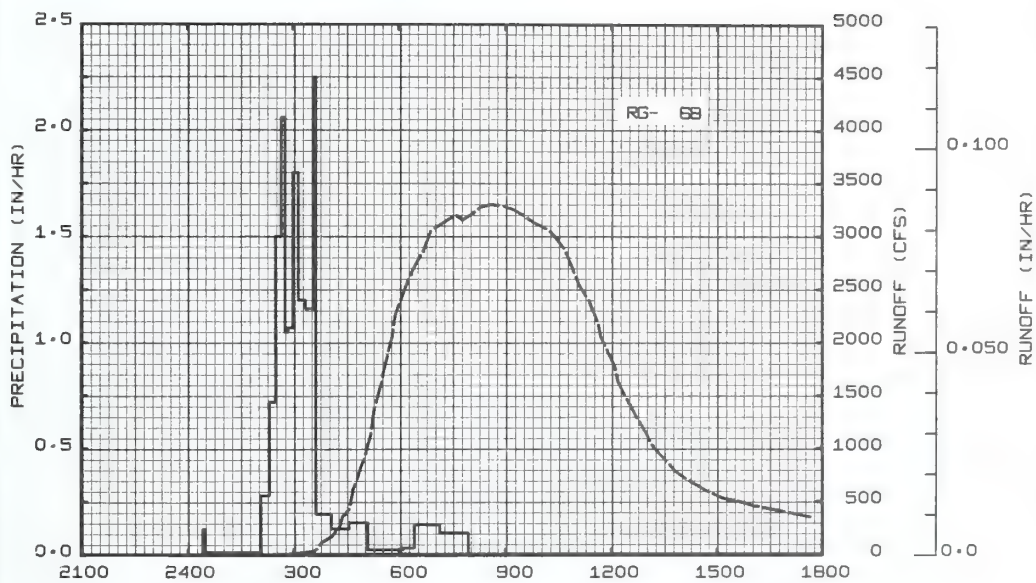
MONTHLY PRECIPITATION AND RUNOFF (inches)						CHICKASHA, OKLAHOMA WATERSHED 511 NEAR TABLER AREA — 38,020 ACRES (59.4 SQ. MILES)										
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967 P 1/ Q	.24 .026	.10 .022	3.21 .109	6.21 1.147	3.45 .122	2.58 .066	1.37 .004	1.37 .000	5.09 .049	2.26 .017	.29 .009	1.10 .012	27.27 1.583			
STA AVG P 2/ Q	.62 .046	1.00 .045	1.74 .096	3.24 .402	2.65 .092	3.05 .066	1.68 .017	3.86 .238	3.46 .184	1.31 .014	2.14 .103	.95 .050	25.70 1.353			
MEAN P 3/ 67 YR	1.16	1.22	1.99	3.35	4.99	3.78	2.52	2.69	3.31	2.88	1.74	1.39	31.02			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	4-12	.0860	4-12	.0857	4-12	.1693	4-12	.460	4-12	.606	4-12	.670	4-12	.784	4-9	.896
MAXIMUMS FOR PERIOD OF RECORD 4/																
19 62 TO 19 67	4-12 1967	.0860	4-12 1967	.0857	4-12 1967	.1693	4-12 1967	.460	4-12 1967	.606	4-12 1967	.670	4-12 1967	.784	4-9 1967	.896
Notes: For the revised watershed conditions, see table on p. 69.7-4 of Hydrologic Data for Experimental Agricultural Watersheds in the United States, this publication. For maps, see Hydrologic Data for Experimental Agricultural Watersheds in the United States, 1962, Topography, p. 69.13-4 and Geologic, p. 69.7-9; 1965, Composite, p. 69.7-21.																
1/ Precipitation data obtained from a Thiessen weighted average of 15 gages on the watershed. 2/ Precipitation records began Oct. 1961; runoff records began Oct. 1962. 3/ Mean P based on 67-yr (1901-67) U.S. Weather Bureau record period at Chickasha, Okla.; missing months estimated. 4/ Period of record began Oct. 1962.																
MISCELLANEOUS DATA																
RUNOFF PEAK DATA: YEAR (1967): Maximum — Apr. 12, 3,298 cfs (16.21 ft). Minimum — Aug. 1, no flow (1.00 ft). PERIOD OF RECORD: Maximum — Apr. 12, 1967, 3,298 cfs (16.21 ft). Minimum — no flow. Period of flow began Oct. 19, 1962. PEAK DISCHARGES: (Above base flow of 600 cfs) 1967 — Apr. 12, 3,298 cfs (16.21 ft); Apr. 20, 1,594 cfs (10.84 ft).																
DAILY TEMPERATURE: See p. 69.7-3.																

1967 DAILY PRECIPITATION (inches)						CHICKASHA, OKLAHOMA WATERSHED 511 NEAR TABLER						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.00	.07	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.01	.00	.62	.00	.16	.00
3	.00	.00	.00	.00	.00	.00	.16	.08	1.00	.00	.05	.00
4	.00	.00	.00	.00	.00	.00	.00	.78	.31	.00	.00	.03
5	.00	.00	.00	.00	1.14	.00	.22	.00	.72	.00	.00	.00
6	.00	.00	.03	.00	.01	.00	.00	.00	.04	.00	.00	.00
7	.00	.00	.00	.41	.00	.00	.00	.00	.01	1.01	.00	.00
8	.00	.03	.00	.00	.00	.03	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.97	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.52	.00	.00	.00	.00	.00	.00	.00	.04
11	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00
12	.00	.00	.11	2.62	.00	.08	.00	.00	.00	.00	.00	.00
13	.00	.00	.03	.47	.05	.00	.00	.00	.06	.00	.00	.04
14	.00	.00	.00	.00	.02	.00	.00	.02	.33	.00	.00	.15
15	.00	.00	.00	.00	.00	.00	.01	.00	.00	.39	.00	.06
16	.00	.00	.00	.00	.00	.01	.23	.00	.10	.00	.00	.55
17	.00	.00	.00	.00	.00	.00	.00	.22	.00	.00	.00	.01
18	.00	.00	.00	.00	.00	.02	.39	.00	.00	.00	.00	.00
19	.00	.00	.52	.46	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.01	.76	.90	.00	.00	.00	.71	.00	.00	.00
21	.00	.00	.00	.00	.00	.01	.00	.00	.11	.00	.00	.02
22	.00	.00	.72	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.38	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.02	.00	.00	.00	.00	.00	.00
25	.11	.00	1.01	.00	.00	1.67	.00	.00	.00	.00	.00	.00
26	.13	.00	.09	.00	.00	.36	.00	.00	1.08	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.01	.00	.33	.00	.00	.00	.01	.00
29	.00	-----	.00	.00	.58	.00	.00	.00	.00	.00	.07	.00
30	.00	-----	.16	.00	.58	.00	.00	.00	.00	.53	.00	.20
31	.00	-----	.53	-----	.16	-----	.00	.26	-----	.33	.00	.00
TOTAL	.24	.10	3.21	6.21	3.45	2.58	1.37	1.37	5.09	2.26	.29	1.10
STA AV	.62	1.00	1.74	3.24	2.65	3.05	1.68	3.86	3.46	1.31	2.14	.95
NOTES: YEARLY PRECIPITATION 27.27 INCHES. PRECIPITATION VALUES ARE A THIESSEN WEIGHTED AVERAGE OF 15 GAGES ON THE WATERSHED.												
1967 MEAN DAILY DISCHARGE (cfs)						CHICKASHA, OKLAHOMA WATERSHED 511 NEAR TABLER						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	<u>1.5</u>	<u>1.4</u>	<u>1.2</u>	<u>7.1</u>	<u>3.0</u>	<u>2.0</u>	.5	.0	.0	.3	<u>1.2</u>	.5
2	<u>1.5</u>	<u>1.4</u>	<u>1.1</u>	<u>3.3</u>	<u>2.5</u>	<u>1.1</u>	.4	.0	.0	.2	<u>1.2</u>	.4
3	<u>1.4</u>	<u>1.4</u>	<u>1.1</u>	<u>2.1</u>	<u>2.3</u>	<u>1.0</u>	.8	.0	.0	.1	<u>1.0</u>	.4
4	<u>1.4</u>	<u>1.4</u>	<u>1.1</u>	<u>1.7</u>	<u>2.4</u>	.9	.5	.0	11	.1	.9	.3
5	<u>1.4</u>	<u>1.3</u>	<u>1.3</u>	<u>1.4</u>	<u>5.9</u>	.9	<u>1.1</u>	.0	15	.1	.9	.3
6	<u>1.3</u>	<u>1.1</u>	<u>1.3</u>	<u>1.3</u>	<u>10.3</u>	.8	.6	.0	2.6	.1	.7	.4
7	<u>1.2</u>	<u>1.1</u>	<u>1.2</u>	<u>1.4</u>	<u>16</u>	.6	.4	.0	.5	<u>9.3</u>	.3	.4
8	<u>1.1</u>	<u>1.1</u>	<u>1.2</u>	<u>3.9</u>	<u>9.2</u>	<u>1.1</u>	.5	.0	.1	<u>4.3</u>	.3	.7
9	<u>1.1</u>	<u>1.2</u>	<u>1.1</u>	<u>12</u>	<u>5.3</u>	.6	.4	.0	.0	.8	.3	.7
10	<u>1.1</u>	<u>1.2</u>	<u>1.1</u>	<u>* 10.4</u>	<u>3.9</u>	.5	.2	.0	.0	.4	.4	.7
11	<u>1.2</u>	<u>1.4</u>	<u>1.1</u>	<u>12</u>	<u>2.2</u>	.6	.1	.0	.0	.3	.4	.6
12	<u>1.3</u>	<u>1.4</u>	<u>1.1</u>	<u>* 10.50</u>	<u>1.7</u>	.5	<u>.0</u>	.0	.0	.2	.3	.4
13	<u>1.4</u>	<u>1.3</u>	<u>1.1</u>	<u>192</u>	<u>1.5</u>	.4	.0	.0	.0	.2	.3	.4
14	<u>1.4</u>	<u>1.1</u>	<u>1.3</u>	<u>43</u>	<u>1.5</u>	.4	.0	.0	.0	.2	<u>.2</u>	.4
15	<u>1.4</u>	<u>1.2</u>	<u>1.4</u>	<u>26</u>	<u>1.5</u>	.2	.0	.0	.0	.3	<u>.3</u>	.6
16	<u>1.3</u>	<u>1.1</u>	<u>1.3</u>	<u>16</u>	<u>1.3</u>	.2	.0	.0	.1	<u>1.1</u>	.3	.8
17	<u>1.2</u>	<u>1.2</u>	<u>1.1</u>	<u>9.2</u>	<u>1.2</u>	.2	.0	<u>.7</u>	.0	<u>1.1</u>	.2	<u>1.2</u>
18	<u>1.1</u>	<u>1.2</u>	<u>1.1</u>	<u>6.7</u>	<u>1.1</u>	.2	.1	.0	.0	<u>1.0</u>	.4	.9
19	<u>1.1</u>	<u>1.3</u>	<u>1.1</u>	<u>7.1</u>	.9	.1	.2	.0	.0	.6	.4	.9
20	<u>1.1</u>	<u>1.3</u>	<u>5.5</u>	<u>* 24.3</u>	<u>12</u>	.1	.3	.0	.0	.5	.4	.8
21	<u>1.3</u>	<u>1.2</u>	<u>3.4</u>	<u>43</u>	<u>3.5</u>	<u>.0</u>	.2	.0	<u>4.0</u>	.5	.4	.9
22	<u>1.4</u>	<u>1.2</u>	<u>3.0</u>	<u>11</u>	<u>1.6</u>	.0	.1	.0	<u>8.4</u>	.6	.4	.7
23	<u>1.4</u>	<u>1.2</u>	<u>8.0</u>	<u>7.1</u>	<u>1.2</u>	.0	.0	.0	.3	.7	.4	.6
24	<u>1.4</u>	<u>1.2</u>	<u>3.2</u>	<u>5.2</u>	<u>1.0</u>	.0	.0	.0	.2	.4	.4	.6
25	<u>1.4</u>	<u>1.2</u>	<u>* 7.4</u>	<u>4.5</u>	.8	<u>.69</u>	.0	.0	.1	.4	.4	.7
26	<u>1.4</u>	<u>1.2</u>	<u>4.0</u>	<u>4.3</u>	.7	<u>14</u>	.0	.0	<u>15</u>	.7	.4	.6
27	<u>1.4</u>	<u>1.3</u>	<u>4.6</u>	<u>3.9</u>	<u>.6</u>	<u>5.2</u>	.0	.0	<u>19</u>	.4	.4	.6
28	<u>1.4</u>	<u>1.3</u>	<u>2.8</u>	<u>3.6</u>	.7	<u>2.9</u>	.0	.0	<u>1.4</u>	.6	.3	.6
29	<u>1.4</u>	-----	<u>2.2</u>	<u>3.7</u>	<u>1.1</u>	.9	.0	.0	.6	.4	.4	.6
30	<u>1.4</u>	-----	<u>1.9</u>	<u>3.7</u>	<u>2.3</u>	.5	.0	.0	.4	.5	.5	.9
31	<u>1.4</u>	-----	<u>3.6</u>	-----	<u>3.7</u>	.0	.0	.0	-----	<u>1.1</u>	-----	<u>1.2</u>
MEAN	<u>1.3</u>	<u>1.2</u>	<u>5.6</u>	<u>61</u>	<u>6.3</u>	<u>3.5</u>	.2	.0	<u>2.6</u>	.9	.5	.6
INCHES	.026	.022	.109	<u>1.147</u>	.122	.066	.004	.000	.049	.017	.009	.012
NOTES: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .0006260. TO CONVERT DISCHARGE IN INCHES TO AC-FT, MULTIPLY BY 3.168. YEARLY MEAN DISCHARGE, 6.9 CFS. YEARLY DISCHARGE, 1.583 INCHES. MAXIMUM AND MINIMUM FLOWS EACH MONTH UNDERLINED. * DISCHARGE MEASUREMENTS.												

1967 SELECTED RUNOFF EVENTS			CHICKASHA, OKLAHOMA				WATERSHED 511 NEAR TABLER			
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)
			Event of April 12, 1967							
Watershed conditions: The land use of this 59.4 sq. mi. watershed is not monitored seasonally. For revised watershed conditions, see p. 69.7-4, this publication.			4-12	0025	6.8	.00	4-12	0254	6.7	.0000
				0030	.12	.01		0318	13.4	.0001
				0204	.01	.02		0336	32.5	.0003
				0219	.28	.09		0342	63.8	.0004
				0229	.72	.21		0348	110.2	.0006
				0239	1.50	.46		0406	169.5	.0017
				0246	2.06	.70		0418	253.0	.0028
				0250	1.05	.77		0424	355.9	.0036
				0259	1.07	.93		0436	429.9	.0057
				0308	1.80	1.20		0442	612.4	.0070
				0320	1.20	1.44		0448	697.6	.0087
				0334	1.16	1.71		0454	813.8	.0107
				0338	2.25	1.86		0500	902.4	.0130
				0404	.19	1.94		0506	1012.6	.0155
				0424	.12	2.00		0512	1137.2	.0183
				0506	.15	2.08		0518	1370.4	.0215
				0605	.02	2.10		0524	1500.0	.0253
				0625	.03	2.11		0530	1634.3	.0294
				0708	.14	2.21		0536	1776.0	.0338
				0757	.10	2.29		0542	1916.6	.0386
								0548	2049.5	.0438
								0554	2260.0	.0494
								0600	2373.2	.0555
								0612	2530.7	.0682
								0624	2695.6	.0819
								0642	2871.4	.1037
								0654	3051.8	.1191
								0736	3204.2	.1762
								0742	3182.7	.1846
								0748	3154.2	.1928
								0806	3222.1	.2178
								0818	3276.1	.2347
								0830	3294.2	.2518
			0836	3297.8	.2604					
			0848	3294.2	.2776					
			0854	3290.5	.2862					
			0912	3261.7	.3119					
			0924	3222.1	.3284					
			0948	3136.5	.3619					
			1012	3065.8	.3943					
			1024	3006.3	.4101					
			1042	2871.4	.4331					
			1054	2705.6	.4477					
			1106	2540.4	.4614					
			1124	2376.3	.4806					
			1136	2216.6	.4926					
			1142	2064.4	.4982					
			1154	1919.5	.5086					
			1206	1773.2	.5182					
			1212	1637.1	.5226					
			1224	1497.4	.5308					
			1236	1372.9	.5383					
			1248	1250.4	.5451					
			1300	1130.1	.5513					
			1312	1010.3	.5569					
			1330	900.2	.5644					
			1348	791.2	.5710					
			1412	697.6	.5788					
			1442	601.4	.5873					
			1500	552.8	.5910					
			1512	524.8	.5946					
			1530	509.3	.5986					
			1600	462.3	.6050					
			1624	433.1	.6096					
			1742	348.3	.6229					
			1918	261.9	.6356					

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR. MULTIPLY BY .00002608. FOR 30-DAY ANTECEDENT P AND Q, SEE P. 69.13-2. FOR ISOHYETAL MAP, SEE P. 69.7-7, THIS PUBLICATION.

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR. MULTIPLY BY .00002608. FOR 30-DAY ANTECEDENT P AND Q, SEE P. 69.13-2. FOR ISOHYETAL MAP, SEE P. 69.7-7, THIS PUBLICATION.



APRIL 11-12, 1967

CHICKASHA, OKLAHOMA WATERSHED 511

RG- 88

PRECIPITATION (IN/HR)

RUNOFF (CFS)

RUNOFF (IN/HR)

April 20-21, 1967

MONTHLY PRECIPITATION AND RUNOFF (inches)						CHICKASHA, OKLAHOMA WATERSHED 110 NEAR ANADARKO AREA — 25,020 ACRES (39.1 SQ. MILES)										
MONTH YEAR		JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	P ^{1/}	.48	.07	1.50	4.80	2.67	1.80	2.94	1.09	5.00	2.82	.27	1.11	24.55		
	Q	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000		
STA AVG	P ^{2/}	.50	.94	1.20	2.83	3.28	3.17	1.69	2.68	3.78	1.41	1.95	.81	24.24		
	Q	.000	.003	.007	.027	.036	.003	.000	.001	.000	.000	.004	.000	.081		
MEAN	P ^{3/}	1.16	1.22	1.99	3.35	4.99	3.78	2.52	2.69	3.31	2.88	1.74	1.39	31.02		
67 YR																
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS ^{4/}																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
MAXIMUMS FOR PERIOD OF RECORD ^{5/}																
19 63 TO	5-11	.0037	5-11	.0037	5-11	.0074	5-11	.021	5-11	.038	5-11	.061	5-11	.087	5-11	.114
19 67	1964		1964		1964		1964		1964		1964		1964		1964	
Notes: For the revised watershed conditions, see table on p. 69.7-4, this publication. For maps, see Hydrologic Data for Experimental Agricultural Watersheds in the United States, 1962, Topography, p. 69.10-4 and Geologic, p. 69.7-9; 1965, Composite, p. 69.7-9. ^{1/} Precipitation data obtained from a Thiessen weighted average of 10 gages on the watershed. ^{2/} Precipitation records began Oct. 1961; runoff records began Apr. 1963. ^{3/} Mean P based on 67-yr (1901-67) U.S. Weather Bureau record period at Chickasha, Okla.; missing months estimated. ^{4/} No runoff, so maximum volumes could not be computed. ^{5/} Period of record began Apr. 1963.																
MISCELLANEOUS DATA																
RUNOFF PEAK DATA: YEAR (1967): Maximum — no flow. Minimum — no flow.																
PERIOD OF RECORD: Maximum — May 11, 1964, 95 cfs (8.18 ft). Minimum — no flow. Period of record began Apr. 1, 1963.																
PEAK DISCHARGES: (Above base flow of 100 cfs) None.																
DAILY TEMPERATURE: See p. 69.7-3.																
NO SELECTED RUNOFF EVENT REPORTED FOR 1967.																

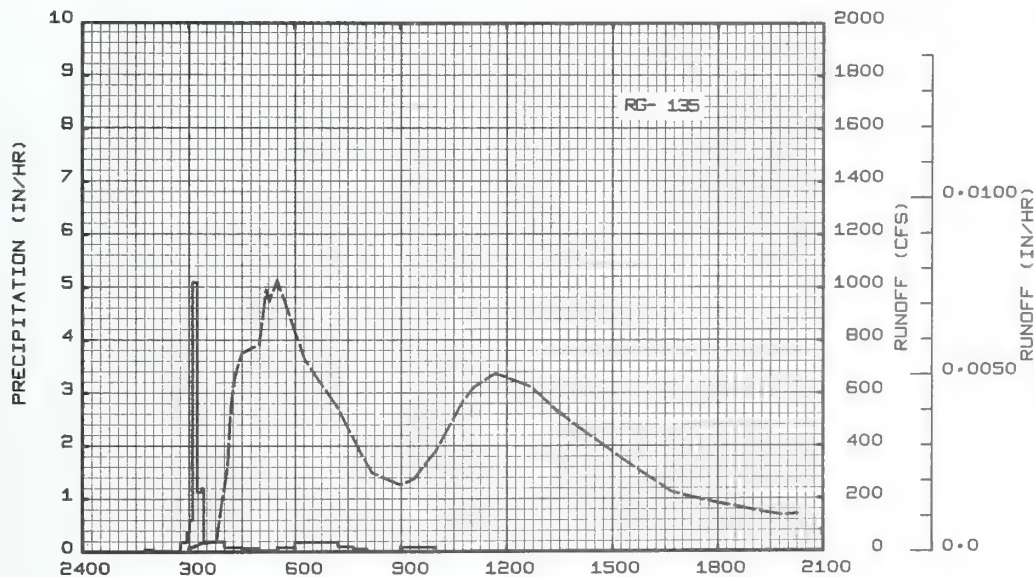
1967 DAILY PRECIPITATION (inches)						CHICKASHA, OKLAHOMA WATERSHED 110 NEAR ANADARKO						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.00	.05	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.29	.00	.20	.00
3	.00	.00	.00	.00	.00	.00	.98	.00	1.29	.00	.01	.00
4	.00	.00	.00	.00	.00	.00	.00	.33	.23	.00	.00	.09
5	.00	.00	.00	.00	.84	.00	.26	.00	.89	.00	.00	.00
6	.00	.00	.04	.00	.00	.00	.00	.00	.06	.00	.00	.00
7	.00	.00	.00	.15	.00	.00	.00	.00	.01	1.50	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	1.14	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.67	.00	.00	.00	.00	.00	.00	.00	.15
11	.00	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.02	2.00	.00	.13	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.48	.05	.00	.00	.00	.30	.00	.00	.02
14	.00	.00	.00	.00	.02	.00	.00	.03	.48	.00	.00	.07
15	.00	.00	.00	.00	.00	.00	.03	.00	.00	.11	.00	.08
16	.00	.00	.00	.00	.00	.00	.07	.00	.01	.00	.00	.53
17	.00	.00	.00	.00	.00	.01	.00	.15	.00	.00	.00	.01
18	.00	.00	.00	.00	.00	.32	.96	.00	.00	.00	.00	.00
19	.00	.00	.51	.18	.04	.00	.13	.00	.00	.00	.00	.00
20	.00	.00	.00	.18	.73	.00	.00	.03	.45	.00	.00	.00
21	.00	.00	.00	.00	.00	.01	.00	.00	.04	.00	.00	.00
22	.00	.00	.51	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.12	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.25	.00	.00	.00	.00
25	.48	.00	.19	.00	.00	.62	.00	.00	.00	.00	.00	.00
26	.00	.00	.06	.00	.00	.57	.00	.01	.95	.00	.00	.00
27	.00	.01	.00	.00	.00	.02	.02	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.49	.00	.00	.00	.04	.00
29	.00	-----	.00	.00	.25	.00	.00	.00	.00	.00	.02	.00
30	.00	-----	.01	.00	.48	.00	.00	.00	.00	.85	.00	.16
31	.00	-----	.16	-----	.26	-----	.00	.29	-----	.36	-----	.00
TOTAL	.48	.07	1.50	4.80	2.67	1.80	2.94	1.09	5.00	2.82	.27	1.11
ST. AV.	.50	.94	1.20	2.83	3.28	3.17	1.69	2.68	3.78	1.41	1.95	.81
NOTES: YEARLY PRECIPITATION 24.55 INCHES. PRECIPITATION VALUES ARE A THIESSEN WEIGHTED AVERAGE OF 10 GAGES ON THE WATERSHED.												
1967 MEAN DAILY DISCHARGE (cfs)						CHICKASHA, OKLAHOMA WATERSHED 110 NEAR ANADARKO						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
7	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
14	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
15	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
16	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
17	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
18	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
19	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
20	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
21	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
22	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
23	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
24	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
25	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
26	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
27	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
28	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
29	.0	-----	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
30	.0	-----	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
31	.0	-----	.0	-----	.0	-----	.0	.0	-----	.0	-----	.0
MEAN	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
INCHES	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NOTES TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .00009513. TO CONVERT DISCHARGE IN INCHES TO AC-FT, MULTIPLY BY 2.085. YEARLY MEAN DISCHARGE: .0 CFS. YEARLY DISCHARGE: .000 INCHES. MAXIMUM AND MINIMUM FLOWS EACH MONTH UNDERLINED. * DISCHARGE MEASUREMENTS.												

MONTHLY PRECIPITATION AND RUNOFF (inches)						CHICKASHA, OKLAHOMA WATERSHED 522 NEAR NINNEKAH AREA — 132,990 ACRES (207.8 SQ. MILES)										
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	P ¹ / _Q	.15 .049	.06 .039	2.08 .059	4.90 .259	3.82 .071	1.94 .026	3.18 .033	.81 .001	4.29 .022	3.72 .048	.35 .033	1.03 .045	26.33 .685		
STA AVG	P ² / _Q	.62 .073	.97 .068	1.34 .081	2.94 .152	3.50 .233	2.90 .079	1.84 .027	2.86 .060	3.72 .050	1.72 .029	2.18 .114	.82 .054	25.41 1.020		
MEAN 67 YR	P ³ / _Q	1.16	1.22	1.99	3.35	4.99	3.78	2.52	2.69	3.31	2.88	1.74	1.39	31.02		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	4-10	.0127	4-10	.0126	4-10	.0242	4-10	.052	4-9	.075	4-9	.092	4-9	.099	4-9	.198
MAXIMUMS FOR PERIOD OF RECORD ⁴ / ₅																
¹⁹ 63 TO 1967	5-10 1964	.0564	5-10 1964	.0553	5-10 1964	.1076	5-9 1964	.253	5-9 1964	.316	5-9 1964	.365	5-9 1964	.476	5-6 1964	.532
Notes: For the revised watershed conditions, see table on p. 69.7-4 of Hydrologic Data for Experimental Agricultural Watersheds in the United States, this publication. For maps, see Hydrologic Data for Experimental Agricultural Watersheds in the United States, 1962, p. 69.7-9, Geologic; 1963, p. 69.15-4, Topography; and 1965, p. 69.7-21, Composite. ¹ / Precipitation data obtained from a Thiessen weighted average of 36 gages on the watershed. ² / Precipitation records began Oct. 1961; runoff records began Apr. 1963. ³ / Mean P based on 67-yr (1901-67) U.S. Weather Bureau record period at Chickasha, Okla.; missing months estimated. ⁴ / Period of record began Apr. 1963.																
MISCELLANEOUS DATA																
RUNOFF PEAK DATA: YEAR (1967): Maximum — Apr. 10, 1,710 cfs (13.77 ft). Minimum — June 24, no flow (8.81 ft). PERIOD OF RECORD: Maximum — May 10, 1964, 7,562 cfs (20.65 ft). Minimum — no flow. Period of record began Apr. 1963. U.S. Geological Survey records available back to Oct. 1, 1951. PEAK DISCHARGES: (Above base flow of 1,500 cfs) 1967 — Apr. 10, 1,710 cfs (13.77 ft).																
DAILY TEMPERATURE: See p. 69.7-3.																

1967 DAILY PRECIPITATION (inches)						CHICKASHA, OKLAHOMA WATERSHED 522 NEAR NINNEKAH						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.00	.06	.00	.00	.00	.00	.01	.00	.00	.00	.01	.00
2	.00	.00	.00	.00	.00	.00	.04	.00	.09	.00	.16	.00
3	.00	.00	.00	.00	.00	.00	.57	.02	1.21	.00	.05	.00
4	.00	.00	.00	.00	.00	.00	.00	.35	.14	.00	.00	.02
5	.00	.00	.00	.00	1.15	.00	.24	.00	.91	.00	.00	.00
6	.00	.00	.03	.00	.00	.00	.00	.00	.01	.00	.00	.00
7	.00	.00	.00	.36	.00	.00	.00	.00	.01	.70	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	1.90	.00	.00	.00	.00	.00	.00	.01	.00
10	.00	.00	.00	.33	.00	.00	.00	.00	.00	.00	.00	.07
11	.00	.00	.00	.00	.00	.04	.04	.00	.00	.00	.00	.00
12	.00	.00	.02	1.35	.00	.08	.02	.00	.00	.00	.00	.00
13	.00	.00	.00	.52	.02	.00	.00	.00	.05	.00	.00	.05
14	.00	.00	.00	.00	.03	.00	.00	.01	.63	.00	.00	.09
15	.00	.00	.00	.00	.00	.00	.15	.00	.00	1.25	.00	.08
16	.00	.00	.00	.00	.00	.00	.05	.00	.01	.00	.00	.59
17	.00	.00	.00	.00	.00	.01	.00	.15	.00	.00	.00	.01
18	.00	.00	.00	.03	.00	.12	.74	.00	.01	.00	.00	.00
19	.00	.00	.40	.08	.00	.00	.20	.00	.00	.00	.00	.00
20	.00	.00	.00	.33	1.05	.00	.00	.01	.33	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.03	.00	.00	.00
22	.00	.00	.61	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.10	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00
25	.11	.00	.44	.00	.00	.26	.00	.00	.00	.00	.00	.00
26	.04	.00	.13	.00	.00	1.10	.00	.00	.86	.00	.00	.00
27	.00	.00	.00	.00	.00	.23	.14	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.03	.00	.98	.00	.00	.00	.06	.00
29	.00	-----	.00	.00	.62	.00	.00	.00	.00	.01	.06	.00
30	.00	-----	.03	.00	.70	.00	.00	.00	.00	1.33	.00	.12
31	.00	-----	.42	-----	.22	-----	.00	.26	-----	.43	-----	.00
TOTAL	.15	.06	2.08	4.90	3.82	1.94	3.18	.81	4.29	3.72	.35	1.03
ST. ANV.	.62	.97	1.34	2.94	3.50	2.90	1.84	2.86	3.72	1.72	2.18	.82
NOTES: YEARLY PRECIPITATION 26.33 INCHES. PRECIPITATION VALUES ARE A THIESSEN WEIGHTED AVERAGE OF 36 GAGES ON THE WATERSHED.												
1967 MEAN DAILY DISCHARGE (cfs)						CHICKASHA, OKLAHOMA WATERSHED 522 NEAR NINNEKAH						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	<u>13</u>	8.4	7.8	23	* 7.8	13	.9	.9	.0	.5	* <u>18</u>	10
2	<u>12</u>	8.4	7.8	14	7.8	11	1.1	.5	.2	.2	5.3	8.4
3	* 8.9	<u>8.9</u>	7.8	7.3	8.4	10	10	.1	.5	.5	4.4	7.3
4	8.9	8.4	7.8	6.3	8.4	7.8	11	.7	<u>36</u>	* 1.1	4.4	* 6.3
5	8.9	8.4	7.3	5.3	19	5.3	8.4	2.5	* 19	1.1	2.5	6.8
6	8.9	8.4	8.9	<u>4.9</u>	* <u>10.9</u>	5.3	8.4	<u>2.9</u>	7.8	.4	2.2	8.4
7	8.9	8.4	8.9	5.8	10	4.4	5.3	* <u>10</u>	4.9	1.9	2.5	9.5
8	6.3	8.4	7.8	11	7.8	3.6	5.3	.0	4.4	11	1.9	8.9
9	6.3	8.9	8.9	* 100	6.3	2.9	4.0	.0	4.4	3.2	3.2	7.8
10	11	8.4	8.4	* <u>4.36</u>	5.8	2.5	* 1.9	.0	3.2	4.0	3.2	7.3
11	9.5	8.4	8.4	* 29	4.9	2.9	1.6	.0	* 2.2	3.6	2.9	7.3
12	10	8.4	8.4	* 318	5.3	* 2.9	1.4	.0	1.9	3.2	3.6	6.3
13	9.5	* 7.8	* 7.8	* 155	6.3	5.3	.9	.0	1.1	3.2	4.9	<u>5.3</u>
14	8.9	7.3	7.8	* 32	8.4	4.4	.7	* .0	4.9	3.2	5.3	5.8
15	7.8	7.3	6.8	19	E 8.9	2.9	.9	* .0	7.3	* <u>114</u>	6.3	8.4
16	* 7.8	7.3	5.8	17	7.8	1.9	4.4	.0	2.2	22	6.8	10
17	7.8	7.3	<u>2.2</u>	10	7.3	1.4	* 4.4	.0	.9	* 6.8	* 6.8	<u>13</u>
18	<u>5.3</u>	7.3	5.3	* 12	6.8	1.4	6.3	.0	.7	4.9	6.8	* 11
19	10	7.3	6.3	15	5.8	1.6	14	.0	.4	4.0	6.8	7.8
20	13	7.3	11	40	31	2.2	13	.0	.4	3.2	8.4	7.3
21	11	7.3	9.5	* 90	29	.7	11	* .0	1.4	2.9	8.9	7.8
22	9.5	7.8	7.8	20	* 11	.2	7.8	.0	1.9	2.9	8.9	8.4
23	7.8	<u>6.8</u>	18	10	5.3	.3	6.8	.0	.7	2.9	8.9	8.4
24	7.3	6.8	9.5	8.9	4.0	<u>10</u>	4.9	.0	.4	2.5	8.9	8.4
25	7.3	7.3	* <u>46</u>	8.9	2.5	.7	3.2	.0	.1	2.5	7.8	7.3
26	7.8	7.8	26	9.5	2.2	* <u>25</u>	.3	.0	.5	3.2	6.8	7.3
27	9.5	* 7.8	* 13	8.4	2.5	19	<u>1</u>	.0	* 11	3.6	5.8	8.4
28	8.4	7.8	9.5	8.4	3.2	2.5	6.6	* .0	5.3	4.9	5.3	7.8
29	8.4	-----	8.9	10	* 10	.7	<u>36</u>	.0	1.4	4.4	7.3	7.3
30	* 8.4	-----	8.9	11	16	.7	4.0	.0	.5	10	10	8.9
31	7.8	-----	17	-----	27	-----	1.6	* .0	-----	38	-----	9.5
MEAN	8.9	7.9	11	48	13	4.8	6.0	.2	4.2	8.7	6.2	8.1
INCHES	.049	.039	.059	.259	.071	.026	.033	.001	.022	.048	.033	.045
NOTES: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .0001790. TO CONVERT DISCHARGE IN INCHES TO AC-FT, MULTIPLY BY 11.082. YEARLY MEAN DISCHARGE, 10.5 CFS. YEARLY DISCHARGE, .685 INCHES. MAXIMUM AND MINIMUM FLOWS EACH MONTH UNDERLINED. * DISCHARGE MEASUREMENTS.												

1967 SELECTED RUNOFF EVENTS			CHICKASHA, OKLAHOMA				WATERSHED 522 NEAR NINNEKAH			
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)
<p>Watershed conditions: The land use of this 207.8 sq. mi. watershed is not monitored seasonally. For revised watershed conditions, see p. 69.7-4, this publication.</p>			Event of April 12, 1967							
			4-12	RG	1.35		4-12			
				0145	.30	.00		0300	11.1	.0000
				0200	.04	.01		0324	33.6	.0001
				0246	.01	.02		0348	38.0	.0002
				0256	.18	.05		0354	142.3	.0002
				0301	.36	.08		0406	318.8	.0006
				0306	.60	.13		0412	543.2	.0007
				0314	1.10	.81		0418	654.1	.0014
				0322	1.13	.96		0430	751.7	.0024
				0325	1.20	1.02		0500	765.7	.0053
				0400	.19	1.13		0512	992.9	.0066
				0430	.08	1.17		0518	949.0	.0073
				0500	.06	1.20		0530	1028.0	.0085
				0530	.02	1.21		0618	728.4	.0140
				0600	.08	1.25		0712	551.8	.0183
				0644	.18	1.38		0754	371.0	.0207
				0714	.16	1.47		0812	298.6	.0215
				0740	.09	1.51		0900	251.3	.0231
				0803	.05	1.53		0924	275.9	.0239
				0821	.00	1.53		1000	352.8	.0254
				0902	.00	1.53		1048	573.7	.0282
				0958	.08	1.60		1106	625.0	.0296
								1142	674.4	.0325
								1242	623.8	.0373
								1324	535.2	.0404
								1506	367.3	.0461
								1642	223.7	.0496
								1800	181.4	.0516
								1954	134.4	.0538
								2018	140.7	.0542
								2106	108.6	.0550

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY .000007458. FOR 30-DAY ANTECEDENT P AND Q, SEE P. 69.15-2. FOR ISOHYETAL MAP, SEE P. 69.7-7, THIS PUBLICATION.



APRIL 12, 1967

CHICKASHA, OKLAHOMA WATERSHED 522

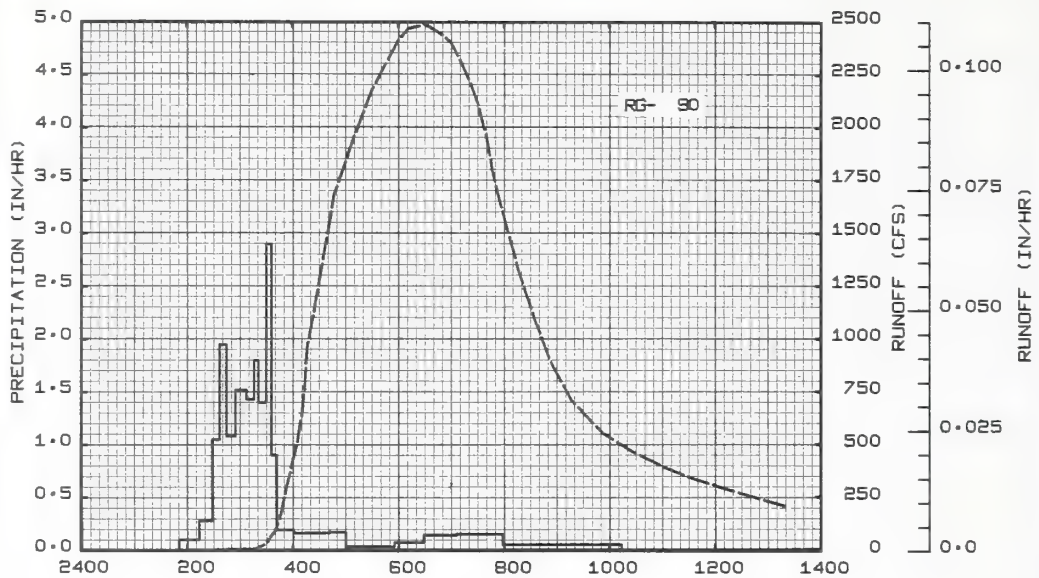
MONTHLY PRECIPITATION AND RUNOFF (inches)						CHICKASHA, OKLAHOMA WATERSHED 512 AT TABLER AREA — 22,530 ACRES (35.2 SQ. MILES)										
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967 P ^{1/}	.09	.10	2.39	6.57	4.29	2.16	1.66	1.50	5.48	2.48	.31	1.11	28.14			
Q	.054	.050	.068	1.169	.212	.063	.019	.001	.091	.039	.037	.050	1.853			
STA A & G P ^{2/}	.71	1.11	1.57	3.29	3.12	3.42	1.82	4.07	3.86	1.51	2.22	.93	27.63			
Q	.100	.104	.139	.429	.236	.074	.031	.293	.156	.051	.196	.081	1.890			
MEAN P ^{3/}	1.16	1.22	1.99	3.35	4.99	3.78	2.52	2.69	3.31	2.88	1.74	1.39	31.02			
67 YR																
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	4-12	.1096	4-12	.1083	4-12	.2090	4-12	.428	4-12	.499	4-12	.534	4-12	.610	4-9	.742
MAXIMUMS FOR PERIOD OF RECORD ^{4/}																
19 63 TO 1967	8-8 1965	.1343	8-8 1965	.1294	8-8 1965	.2441	8-7 1965	.472	8-7 1965	.523	8-7 1965	.543	4-12 1967	.610	4-9 1967	.742
Notes: For the revised watershed conditions, see table on p. 69.7-4 of Hydrologic Data for Experimental Agricultural Watersheds in the United States, this publication. For maps, see Hydrologic Data for Experimental Agricultural Watersheds in the United States, 1962, p. 69.7-9, (Geologic); 1963, p. 69.16-4, (Topography); 1965, p. 69.7-21, (Revised Composite). ^{1/} Precipitation data obtained from a Thiessen weighted average of 10 gages on the watershed. ^{2/} Precipitation records began Oct. 1961; runoff records began July 1963. ^{3/} Mean P based on 67-yr (1901-67) U.S. Weather Bureau record period at Chickasha, Okla.; missing months estimated. ^{4/} Period of record began July 1963.																
MISCELLANEOUS DATA																
<u>RUNOFF PEAK DATA:</u> YEAR (1967): Maximum — Apr. 12, 2,490 cfs (9.99 ft). Minimum — July 15, no flow (1.00 ft). PERIOD OF RECORD: Maximum — Aug. 8, 1965, 3,050 cfs (10.73 ft). Minimum — no flow. Period of record began July 18, 1963. PEAK DISCHARGES: (Above base flow of 600 cfs) 1967 — Apr. 12, 2,490 cfs (9.99 ft); Apr. 20, 1,690 cfs (8.72 ft).																
<u>DAILY TEMPERATURE:</u> See p. 67.7-3.																

1967 DAILY PRECIPITATION (inches)						CHICKASHA, OKLAHOMA WATERSHED 512 AT TABLER						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.00	.08	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.68	.00	.17	.00
3	.00	.00	.00	.00	.00	.00	.22	.01	1.19	.00	.04	.00
4	.00	.00	.00	.00	.00	.00	.00	.82	.40	.00	.00	.00
5	.00	.00	.00	.00	1.17	.00	.29	.00	.69	.00	.00	.00
6	.00	.00	.04	.00	.00	.00	.00	.00	.03	.00	.00	.00
7	.00	.00	.00	.37	.00	.00	.00	.00	.01	.89	.00	.00
8	.00	.02	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	1.08	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.80	.00	.00	.00	.00	.00	.00	.00	.05
11	.00	.00	.00	.00	.00	.00	.00	.02	.00	.00	.00	.00
12	.00	.00	.03	2.52	.00	.08	.00	.00	.00	.00	.00	.00
13	.30	.00	.03	.51	.04	.00	.00	.00	.06	.00	.00	.03
14	.00	.00	.00	.00	.02	.00	.00	.01	.44	.00	.00	.13
15	.00	.00	.00	.00	.00	.00	.01	.00	.00	.61	.00	.06
16	.00	.00	.00	.00	.00	.00	.25	.00	.18	.00	.00	.60
17	.00	.00	.00	.00	.00	.00	.00	.41	.00	.00	.00	.01
18	.00	.00	.00	.00	.00	.09	.45	.00	.00	.00	.00	.00
19	.00	.00	.27	.32	.01	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.97	1.31	.00	.00	.00	.68	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.06	.01	.11	.00	.00	.02
22	.00	.00	.82	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.24	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.49	.00	.00	1.02	.00	.00	.00	.00	.00	.00
26	.09	.00	.08	.00	.00	.73	.00	.00	1.01	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.37	.00	.00	.00	.03	.00
29	.00	-----	.00	.00	.68	.00	.00	.00	.00	.02	.07	.00
30	.00	-----	.13	.00	.83	.00	.00	.00	.00	.65	.00	.21
31	.00	-----	.50	-----	.23	-----	.00	.22	-----	.31	-----	.00
TOTAL	.09	.10	2.39	6.57	4.29	2.16	1.66	1.50	5.48	2.48	.31	1.11
STA AV	.71	1.11	1.57	3.29	3.12	3.42	1.82	4.07	3.86	1.51	2.22	.93
NOTES: YEARLY PRECIPITATION 28.14 INCHES. PRECIPITATION VALUES ARE A THIESSEN WEIGHTED AVERAGE OF 31 GAGES ON THE WATERSHED.												
1967 MEAN DAILY DISCHARGE (cfs)						CHICKASHA, OKLAHOMA WATERSHED 512 AT TABLER						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	1.08E	2.0	1.6	3.6	4.0	3.8	.8	.0	.0	.5	1.2	1.4
2	1.7E	1.9	1.5	2.2	3.5	2.9	.8	.0	.0	.4	1.3	1.3
3	1.6E	1.8	1.5	1.9	3.1	2.5	1.8	.0	4.6	.2	1.3	1.0
4	1.6	1.8	1.5	1.8	3.1	2.4	1.3	.0	13	.3	1.3	1.0
5	1.5	1.8	1.8	1.5	20	2.1	2.5	.4	27	.3	1.1	1.3
6	1.5	1.5	1.6	1.5	49	1.8	1.2	.2	2.2	.3	1.0	1.3
7	1.5	1.6	1.6	1.7	6.1	1.8	.8	.1	.8	8.7	1.0	1.3
8	1.3	1.7	1.5	2.6	4.4	1.6	.9	.0	.4	2.4	1.0	1.3
9	1.2	1.7	1.5	2.1	3.4	1.3	.7	.0	.2	1.0	1.0	1.5
10	1.4	1.7	1.6	75	3.5	1.2	.5	.0	.2	.7	1.1	1.3
11	1.6	1.8	1.6	6.4	3.3	1.2	.3	.0	.2	.7	1.2	1.4
12	1.6	1.7	1.5	500	3.3	1.3	.3	.0	.1	.6	1.1	1.3
13	1.7	1.6	1.5	75	3.3	1.4	.2	.0	.1	.6	1.1	1.3
14	1.8	1.5	1.5	14	3.2	1.2	.0	.0	.5	.5	1.0	1.5
15	1.8	1.6	1.5	8.8	3.1	.9	.0	.0	1.0	6.4	1.1	1.7
16	1.6	1.6	1.3	6.8	2.9	1.1	.0	.0	1.0	2.2	1.1	2.0
17	1.6	1.7	1.3	5.6	2.7	.9	.5	.0	.8	.9	1.0	2.4
18	1.3	1.7	1.3	5.3	2.4	.8E	.9	.0	.6	.6	1.0	2.9
19	1.3	1.7	1.3	6.3	2.3	.7	1.5	.0	.4	.6	1.0	1.7
20	1.6	1.6	1.9	242	26	.6	.9	.0	.4	.5	1.1	1.6
21	1.8	1.6	1.9	58	8.3	.4	.6	.0	7.4	.5	1.2	1.7
22	1.9	1.7	2.8	17	3.6	.4	.5	.0	1.2	.5	1.2	1.3
23	1.8	1.6	6.4	9.2	3.2	.6	.4	.0	.6	.5	1.3	1.3
24	1.8	1.6	2.4	6.6	2.6	.7	.2	.0	.5	.5	1.3	1.4
25	1.8	1.5	5.5	6.1	2.2	9.1	.1	.0	.4	.4	1.3	1.5
26	1.8	1.5	4.4	5.8	1.9	9.2	.1	.0	4.0	.4	1.3	1.4
27	1.8	1.8	2.4	5.1	1.8	3.2	.0	.0	16	.4	1.2	1.5
28	1.8	1.8	2.0	4.8	2.0	1.7	.3	.0	1.4	.4	1.2	1.5
29	1.8	-----	1.8	5.0	4.3	1.1	.2	.0	.7	.6	1.2	1.5
30	1.8	-----	1.6	5.0	6.2	.9	.0	.0	.5	.9	1.5	1.6
31	1.9	-----	3.1	-----	12	-----	.0	.0	-----	3.1	-----	2.1
MEAN	1.6	1.7	2.1	37	6.5	2.0	.6	.0	2.9	1.2	1.2	1.5
INCHES	.054	.050	.068	1.169	.212	.063	.019	.001	.091	.039	.037	.050
NOTES: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .001056. TO CONVERT DISCHARGE IN INCHES TO AC-FT, MULTIPLY BY 1.877. YEARLY MEAN DISCHARGE, 4.8 CFS. YEARLY DISCHARGE, 1.853 INCHES. MAXIMUM AND MINIMUM FLOWS EACH MONTH UNDERLINED. * DISCHARGE MEASUREMENTS.												

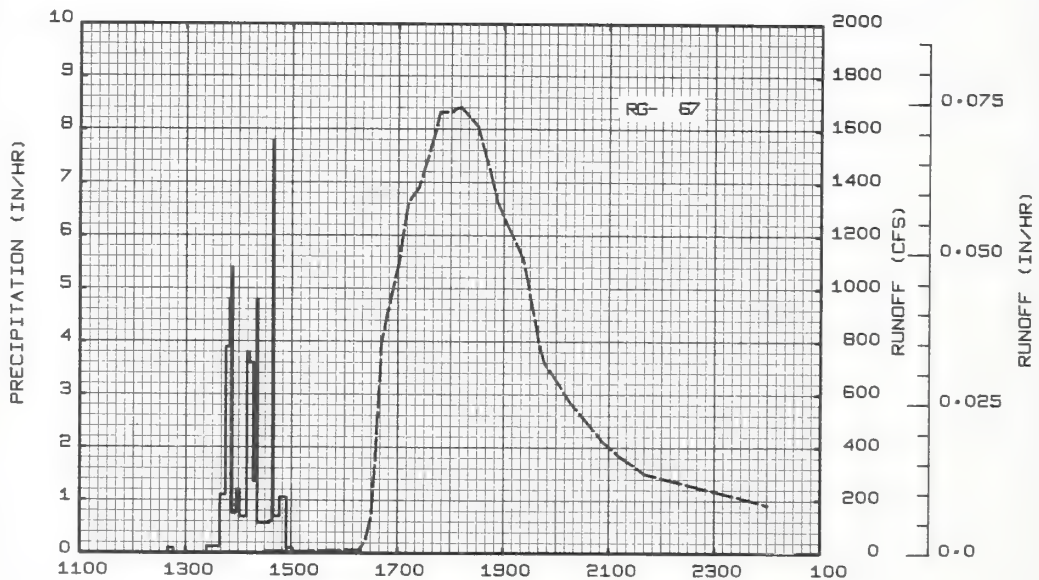
1967			SELECTED RUNOFF EVENTS			CHICKASHA, OKLAHOMA			WATERSHED 512 AT TABLER		
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)	
				Event of April 12, 1967							
			4-12	90	90						
				0151	.00	.00	4-12	0236	3.5	.0000	
				0214	.10	.04		0300	4.1	.0001	
				0229	.28	.11		0318	5.8	.0001	
				0237	1.05	.25		0324	15.5	.0002	
				0245	1.95	.51		0330	32.2	.0005	
				0255	1.08	.69		0336	62.5	.0005	
				0308	1.52	1.02		0342	95.5	.0008	
				0316	1.43	1.21		0348	171.4	.0014	
				0321	1.80	1.36		0354	297.9	.0025	
				0330	1.40	1.57		0400	421.9	.0040	
				0336	2.90	1.86		0406	505.9	.0061	
				0342	.90	1.95		0412	659.2	.0086	
				0401	.19	2.01		0418	977.1	.0122	
				0442	.16	2.12		0424	1106.2	.0168	
				0500	.17	2.17		0430	1278.1	.0221	
				0555	.03	2.20		0442	1533.1	.0344	
				0628	.07	2.24		0448	1685.4	.0415	
				0706	.14	2.33		0500	1840.7	.0570	
				0758	.15	2.46		0512	1973.5	.0738	
				0902	.05	2.51		0530	2183.3	.1013	
				1014	.05	2.57		0600	2420.3	.1519	
								0612	2469.5	.1734	
								0630	2490.8	.2002	
								0648	2448.3	.2387	
								0700	2399.4	.2601	
								0718	2256.2	.2908	
								0730	2111.9	.3100	
								0742	1930.6	.3278	
								0748	1782.2	.3360	
								0800	1570.4	.3507	
								0818	1316.2	.3698	
								0836	1089.0	.3857	
								0854	891.3	.3987	
								0918	707.4	.4128	
								0954	551.7	.4294	
								1030	455.9	.4427	
								1100	396.8	.4521	
								1130	345.1	.4603	
								1206	297.9	.4687	
								1324	201.7	.4830	
NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY .00004400. FOR 30-DAY ANTECEDENT P AND Q, SEE P. 69.16-2. FOR ISOHYETAL MAP, SEE P. 69.7-7, THIS PUBLICATION.											

1967			SELECTED RUNOFF EVENTS			CHICKASHA, OKLAHOMA			WATER MONITORING AT TABLER		
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)	
<p>Watershed conditions: The land use of this 35.2 sq. mi. watershed is not monitored seasonally. For revised watershed conditions, see p. 69.7-4, this publication.</p>			Event of April 20, 1967								
			4-20	50	.67	.00	4-20	1430	5.9	.0001	
				1240	.00	.01		1436	6.3	.0001	
				1247	.09	.01		1442	6.3	.0001	
				1324	.00	.01		1448	6.6	.0001	
				1339	.12	.04		1515	6.3	.0001	
				1345	1.10	.15					
				1349	3.90	.41		1530	7.2	.0001	
				1352	4.80	.63		1554	10.8	.0001	
				1353	5.40	.74		1618	12.9	.0001	
				1357	.75	.79		1624	45.5	.0001	
				1401	1.20	.87		1630	130.7	.0012	
				1409	.68	.90		1636	411.7	.0024	
				1412	3.80	1.15		1642	799.7	.0031	
				1416	3.60	1.35		1648	895.1	.0031	
				1420	1.35	1.48		1700	1085.1	.0031	
				1421	4.80	1.56		1712	1330.7	.0031	
				1435	.56	1.69		1724	1379.7	.0031	
			1438	.60	1.72	1742	1581.1	.0031			
			1439	7.80	1.85	1748	1668.7	.0031			
			1446	.69	1.93	1800	1668.7	.0031			
			1454	1.05	2.07	1808	1679.8	.0031			
			1501	.09	2.08	1812	1675.4	.0031			
						1830	1615.0	.0031			
						1842	1485.1	.0031			
						1854	1330.7	.0031			
						1906	1240.8	.0031			
						1924	1110.8	.0031			
						1936	885.1	.0031			
						1942	789.1	.0031			
						1948	720.7	.0031			
						2018	508.8	.0031			
						2034	424.4	.0031			
						2112	370.4	.0031			
						2142	299.7	.0031			
						2330	205.1	.0031			
						2400	181.7	.0031			
						4-21	01-2	127.0	.0031		

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY .00004400. FOR 30-DAY ANTECEDENT P AND Q, SEE P. 69.16-2, THIS PUBLICATION.



APRIL 12, 1967

CHICKASHA, OKLAHOMA WATERSHED 512

APRIL 20-21, 1967

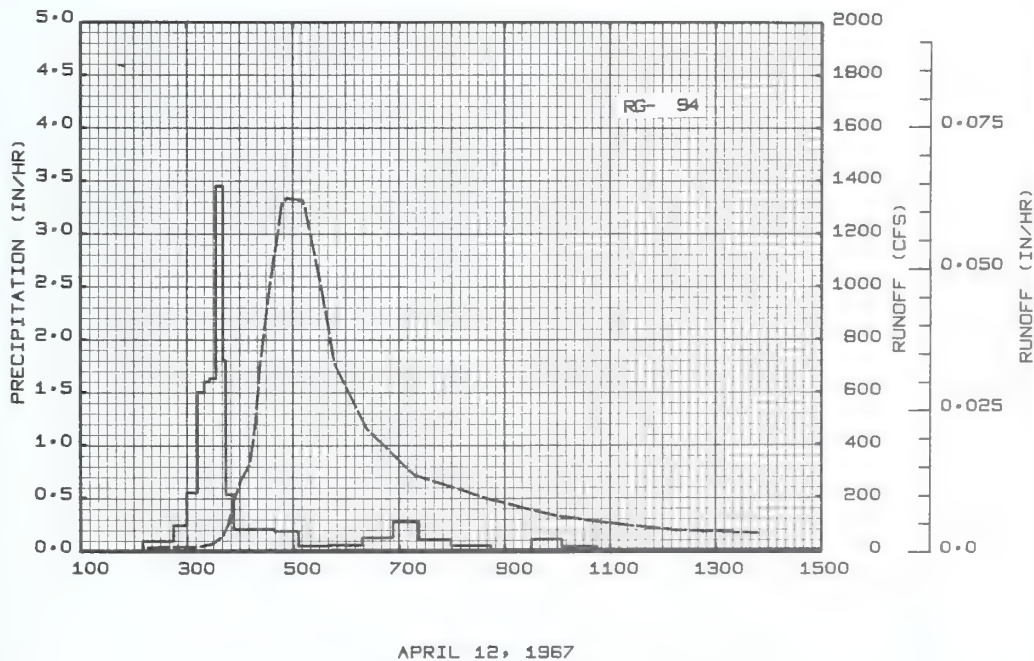
CHICKASHA, OKLAHOMA WATERSHED 512

MONTHLY PRECIPITATION AND RUNOFF (inches)							CHICKASHA, OKLAHOMA WATERSHED 621 NEAR TABLER AREA — 21,310 ACRES (33.3 SQ. MILES)									
MONTH YEAR		JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	P ¹ / _Q	.11	.08	2.21	5.57	5.03	2.04	1.75	.85	5.64	2.54	.34	1.05	27.21		
		.071	.059	.073	.619	.345	.088	.030	.003	.091	.050	.040	.050	1.519		
STA AVG	P ² / _Q	.84	1.11	1.41	3.21	3.58	3.22	1.71	3.45	4.02	1.48	2.18	.92	27.13		
		.125	.132	.141	.299	.414	.084	.027	.186	.214	.063	.213	.091	1.989		
MEAN 67 YR	P ³ / _Q	1.16	1.22	1.99	3.35	4.99	3.78	2.52	2.69	3.31	2.88	1.74	1.39	31.02		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	4-12	.0621	4-12	.0568	4-12	.0890	4-12	.137	4-12	.159	4-12	.188	4-12	.243	4-9	.351
MAXIMUMS FOR PERIOD OF RECORD ⁴ / ₅																
19 63 TO	5-10	.2074	5-10	.1790	5-10	.2690	5-10	.337	5-10	.350	5-9	.618	5-9	.672	5-5	.790
19 67	1964		1964		1964		1964		1964		1964		1964		1964	
Notes: For the revised watershed conditions, see table on p. 69.7-4 of Hydrologic Data for Experimental Agricultural Watersheds in the United States, this publication. For maps, see Hydrologic Data for Experimental Agricultural Watersheds in the United States, 1962, p. 69.7-9, (Geologic); 1965, p. 69.17-8 (revised Topography) and p. 69.7-21 (revised Composite). 1/ Precipitation data obtained from a Thiessen weighted average of 9 gages on the watershed. 2/ Precipitation records began Oct. 1961; runoff records began Oct. 1963. 3/ Mean P based on 67-yr (1901-67) U.S. Weather Bureau record period at Chickasha, Okla.; missing months estimated. 4/ Period of record began Oct. 1963.																
MISCELLANEOUS DATA																
RUNOFF PEAK DATA: YEAR (1967): Maximum — Apr. 12, 1,334 cfs (5.91 ft). Minimum — Aug. 7, no flow (1.00 ft). PERIOD OF RECORD: Maximum — May 10, 1964, 4,460 cfs (8.62 ft). Minimum — no flow. Period of record began Oct. 1963. PEAK DISCHARGES: (Above base flow of 500 cfs) 1967 — Apr. 12, 1,334 cfs (5.91 ft).																
DAILY TEMPERATURE: See p. 69.7-3.																

1967 DAILY PRECIPITATION (inches)						CHICKASHA, OKLAHOMA WATERSHED 621 NEAR TABLER						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.00	.08	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.73	.00	.16	.00
3	.00	.00	.00	.00	.00	.00	.26	.00	1.37	.00	.05	.00
4	.00	.00	.00	.00	.00	.00	.00	.46	.79	.00	.00	.00
5	.00	.00	.00	.00	1.30	.00	.45	.00	.56	.00	.00	.00
6	.00	.00	.04	.00	.00	.00	.00	.00	.02	.00	.00	.00
7	.00	.00	.00	.38	.00	.00	.00	.00	.02	.56	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	1.03	.00	.00	.00	.00	.00	.00	.01	.00
10	.00	.00	.00	.98	.00	.00	.00	.00	.00	.00	.00	.03
11	.00	.00	.00	.00	.00	.00	.00	.02	.00	.00	.00	.00
12	.00	.00	.02	2.12	.00	.06	.01	.00	.00	.00	.00	.00
13	.00	.00	.15	.48	.03	.00	.00	.00	.03	.00	.00	.02
14	.00	.00	.00	.00	.02	.00	.00	.00	.44	.00	.00	.16
15	.00	.00	.00	.00	.00	.00	.01	.00	.00	1.11	.00	.06
16	.00	.00	.00	.00	.00	.00	.26	.00	.25	.00	.00	.61
17	.00	.00	.00	.00	.00	.00	.00	.24	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.03	.31	.00	.02	.00	.00	.00
19	.00	.00	.27	.32	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.26	1.73	.00	.00	.00	.50	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.05	.01	.11	.00	.00	.00
22	.00	.00	.73	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.17	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.54	.00	.00	.79	.00	.00	.00	.00	.00	.00
26	.11	.00	.10	.00	.00	.99	.00	.00	.80	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.04	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.36	.00	.00	.00	.03	.00
29	.00	.00	.00	.00	.70	.00	.00	.00	.00	.02	.09	.00
30	.00	.00	.00	.00	.99	.00	.00	.00	.00	.56	.00	.17
31	.00	.00	.36	.00	.26	.00	.00	.12	.00	.29	.00	.00
TOTAL	.11	.08	2.21	5.57	5.03	2.04	1.75	.85	5.64	2.54	.34	1.05
ST. AVE.	.84	1.11	1.41	3.21	3.58	3.22	1.71	3.45	4.02	1.48	2.18	.92
NOTES: YEARLY PRECIPITATION 27.21 INCHES. PRECIPITATION VALUES ARE A THIESSEN WEIGHTED AVERAGE OF 9 GAGES ON THE WATERSHED.												
1967 MEAN DAILY DISCHARGE (cfs)						CHICKASHA, OKLAHOMA WATERSHED 621 NEAR TABLER						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	2.6	2.0	1.6	2.8	9.0	13	.4	.3	.0	.4	2.0	1.5
2	2.6	2.1	1.4	1.5	6.2	11	.7	.3E	.7	.5	1.4	1.3
3	2.1	1.8	1.6	1.0	5.6	9.2	2.5	.2E	12	.4	2.2	1.0
4	2.2	2.2	1.7	.7	5.6	7.3	1.3	.8	7.9	.4	1.2	1.2
5	2.1	2.2	1.7	.6	32	3.7	2.1	.7	2.0	.4	1.1	1.2
6	2.0	1.5	2.1	.7	22	2.6	1.6	.3E	5.6	.4	1.1	1.1
7	1.6	2.1	1.7	1.2	13	2.1	1.4	.0E	2.4	1.8	1.0	1.1
8	1.5	2.4	1.5	1.6	11	1.5	1.1	.0	1.6	.8	1.0	1.1
9	1.5	2.1	1.8	1.4	8.4	1.1	.7	.0	1.0	.6	1.1	1.1
10	2.1	2.1	1.5	58	7.3	1.2	1.0	.0	.7	.5	1.1	1.1
11	2.4	2.1	1.2	17	6.2	1.0	.5	.0	.5	.5	1.1	1.4
12	2.1	2.0	1.1	* 162	5.9	1.3	.4	.0	.3	.5	1.0	1.3
13	2.1	1.7	3.0	52	5.9	1.0	.4E	.0	.3	.5	1.0	1.0
14	2.1	1.4	1.3	31	5.6	.6	.4E	.0	3.3	.5	1.0	1.6
15	2.1	1.5	1.0	26	5.2	.5	.5E	.0	1.0	17	1.0	1.5
16	2.1	1.6	1.0	22	4.7	.5	.6E	.0	1.4	3.1	1.0	3.1
17	1.6	1.8	.9	18	4.5	.6	.6E	.0	1.3E	2.1	1.0	3.1
18	1.2	2.1	.8	17	3.3	.7	1.2	.0	1.1E	1.5	1.0	1.7
19	2.0	2.1	1.1	17	2.8	.5	1.5	.0	.7	1.1	1.0	1.5
20	2.5	1.7	2.5	15	35	.3	1.0	.0	.9	.9	1.1	1.4
21	2.4	1.6	1.3	11	16	.3	.8	.0	3.5	.8	1.1	1.4
22	2.1	2.0	4.9	11	12	.3	.5	.0	1.0	.6	1.2	1.1
23	2.1	1.7	4.7	9.0	8.1	.3	.3	.0	.7	.6	1.2	1.4
24	1.8	1.6	2.2	7.9	7.9	.3	.3	.0	.6	.5	1.1	1.4
25	1.7	2.0	6.3	7.9	5.6	1.7	.2	.0	.5	.5	1.1	1.3
26	2.4	1.7	6.2	7.3	5.2	13	.2	.0	5.3	.5	1.1	1.2
27	2.1	2.0	2.6	6.7	5.4	1.4E	.3	.0	3.7	.5	1.1	1.4
28	2.1	1.6	1.8	8.1	5.2	1.0E	.6	.0	1.5	.7	1.1	1.4
29	2.1	.0	1.5	13	8.9	.6	.5	.0	1.0	1.0	1.5	1.4
30	2.0	.0	1.2	13	17	.5	.3	.0	.7	2.2	1.7	2.0
31	2.0	.0	2.5	.0	18	.0	.4	.0	.0	2.8	.0	1.4
MEAN	2.0	1.9	2.1	18	10	2.6	0.9	0.1	2.7	1.4	1.2	1.4
NEWES	.071	.059	.073	.619	.345	.088	.030	.003	.091	.050	.040	.050
NOTES: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .001117. TO CONVERT DISCHARGE IN INCHES TO AC-FT, MULTIPLY BY 1.776. YEARLY MEAN DISCHARGE, 3.7 CFS. YEARLY DISCHARGE, 1.519 INCHES. MAXIMUM AND MINIMUM FLOWS EACH MONTH UNDERLINED. * DISCHARGE MEASUREMENTS.												

1967			SELECTED EVENT				CHICKASHA, OKLAHOMA				ANTERIOR, 4-21 NEAR TABLER			
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF							
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)				
				Event of April 12, 1967										
			4-12	MC	94		4-12							
				0210	.00	.00		0217	12.4	.000				
				0245	.09	.05		0306	14.2	.001				
				0300	.24	.11		0338	16.1	.003				
				0312	.55	.22		0350	27.0	.005				
				0320	1.50	.42		0342	34.0	.011				
				0336	1.60	.58		0341	10.0	.011				
				0333	1.03	.77		0354	15.2	.013				
				0341	3.45	1.23		0400	25.7	.013				
				0344	1.60	1.32		0412	36.7	.020				
				0353	.53	1.40		0418	45.3	.019				
				0402	.20	1.43		0424	71.3	.017				
				0439	.20	1.55		0438	103.4	.018				
				0506	.18	1.63		0445	130.1	.017				
				0540	.04	1.65		0454	134.3	.019				
				0615	.05	1.69		0512	130.9	.020				
				0653	.12	1.75		0530	103.9	.015				
				0722	.27	1.68		0548	74.7	.013				
				0759	.10	1.94		0604	41.3	.011				
				0844	.04	1.97		0711	25.0	.010				
				0930	.00	1.97		0742	19.4	.010				
				1005	.10	2.03		1000	126.9	.010				
				1045	.03	2.05		1112	97.9	.010				
								1216	72.0	.010				
								1345	42.5	.013				
Watershed conditions: The land use of this 33.3 sq. mi. watershed is not monitored seasonally. For revised watershed conditions, see p. 69.7-4, this publication.														

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY .00004654. FOR 30-DAY ANTECEDENT P AND Q, SEE P. 69.17-2. FOR ISOHYETAL MAP, SEE P. 69.7-7, THIS PUBLICATION.



CHICKASHA, OKLAHOMA WATERSHED 621

MONTHLY PRECIPITATION AND RUNOFF (inches)						CHICKASHA, OKLAHOMA WATERSHED 121 AT GRACEMONT AREA — 131,780 ACRES (205.9 SQ. MILES)								
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1967	P ₁ / ₀	.35 .030	.16 .034	2.02 .050	5.05 .334	2.50 .056	2.68 .018	1.93 .004	1.35 .001	5.55 .023	1.89 .009	.23 .012	1.16 .022	24.87 .593
STA AVG	P ₂ / ₀	.44 .040	.85 .050	1.19 .061	2.60 .131	2.90 .118	4.17 .056	1.48 .001	2.62 .024	5.87 .344	1.48 .034	1.53 .019	1.04 .041	26.17 .919
MEAN 67 YR	P ₃ / ₀	1.16	1.22	1.99	3.35	4.99	3.78	2.52	2.69	3.31	2.88	1.74	1.39	31.02

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	4-12	.0409	4-12	.0388	4-12	.0737	4-12	.148	4-12	.195	4-12	.219	4-12	.243	4-12	.289

MAXIMUMS FOR PERIOD OF RECORD ^{4/}																
1963 TO 1967	9-21 1965	.0640	9-21 1965	.0622	9-21 1965	.1220	9-21 1965	.318	9-21 1965	.497	9-21 1965	.653	9-21 1965	.815	9-21 1965	1.238

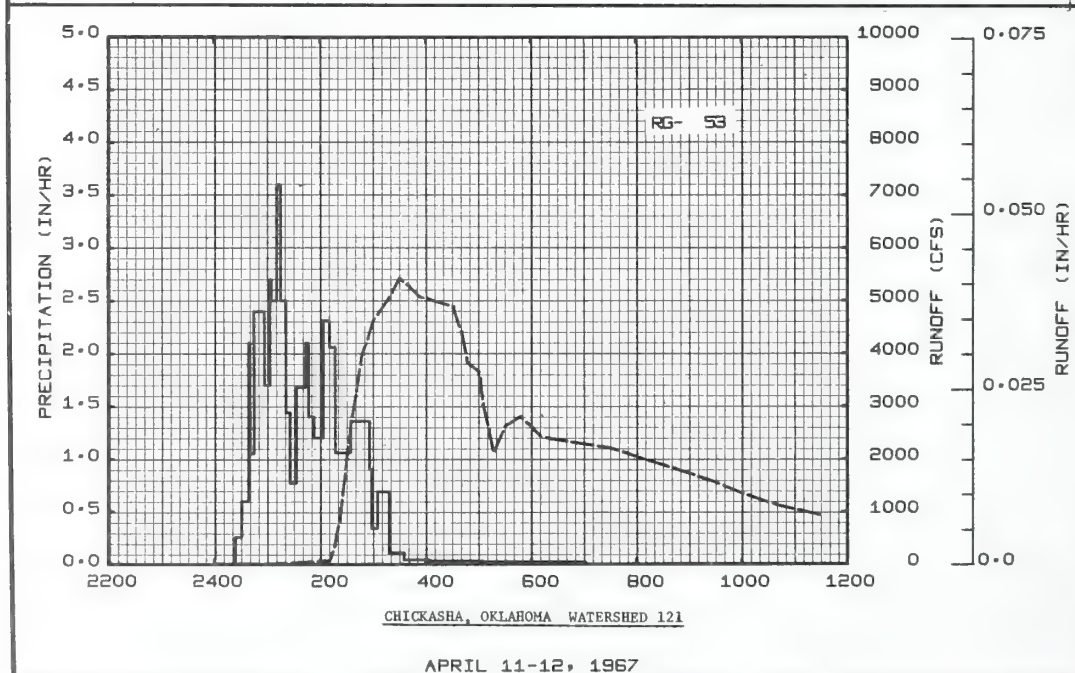
Notes: For the revised watershed conditions, see table on p. 69.7-4, this publication. For maps, see Hydrologic Data for Experimental Agricultural Watersheds in the United States, 1962, p. 69.7-9, (Geologic); 1963, p. 69.18-4, (Topography); and 1965, p. 69.7-21, (revised Composite). The stream gaging station was maintained from Oct. 1955 to Oct. 1963 by the U.S. Geological Survey. ^{1/} Precipitation data obtained from a Thiessen weighted average of 32 gages on the watershed. ^{2/} Precipitation records began Oct. 1961; runoff records began Oct. 1963. ^{3/} Mean P based on 67-yr (1901-67) U.S. Weather Bureau record period at Chickasha, Okla.; missing months estimated. ^{4/} Period of record began Oct. 1963.

MISCELLANEOUS DATA														
RUNOFF PEAK DATA: YEAR (1967): Maximum — Apr. 12, 5,430 cfs (16.96 ft). Minimum — July 1, no flow (5.05 ft). PERIOD OF RECORD: Maximum — Sept. 21, 1965, 8,500 cfs (10.77 ft). Minimum — no flow. Period of record began Oct. 1, 1963. PEAK DISCHARGES: (Above base flow of 900 cfs) Apr. 12, 5,430 cfs (16.96 ft). DAILY TEMPERATURE: See p. 69.7-3.														

1967 DAILY PRECIPITATION (inches)						CHICKASHA, OKLAHOMA WATERSHED 121 AT GRACEMONT						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.00	.10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.01	.00	.20	.00	.15	.00
3	.00	.00	.00	.00	.01	.00	.10	.07	1.16	.00	.01	.00
4	.00	.00	.00	.00	.00	.00	.00	.55	.17	.00	.00	.01
5	.00	.00	.01	.00	.74	.00	.20	.00	.71	.00	.00	.00
6	.00	.00	.01	.00	.22	.01	.00	.00	.25	.01	.00	.00
7	.00	.00	.00	.03	.00	.00	.00	.00	.08	1.08	.00	.00
8	.00	.05	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.23	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.39	.00	.00	.00	.00	.00	.00	.00	.15
11	.00	.00	.00	.06	.00	.00	.05	.00	.00	.00	.00	.00
12	.00	.00	.06	2.91	.00	.25	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.43	.13	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.01	.00	.00	.00	1.17	.00	.00	.04
15	.00	.00	.00	.00	.00	.00	.05	.00	.00	.08	.00	.04
16	.00	.00	.00	.06	.00	.14	.17	.00	.00	.00	.00	.64
17	.00	.00	.00	.00	.00	.31	.00	.21	.00	.00	.00	.03
18	.00	.00	.00	.00	.00	.02	1.14	.00	.00	.00	.00	.00
19	.00	.00	.40	.94	.00	.00	.15	.00	.00	.00	.00	.00
20	.00	.00	.02	.00	.35	.00	.00	.09	1.14	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.06
22	.00	.00	.76	.00	.00	.00	.00	.01	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.57	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.35	.00	.38	.00	.00	1.34	.00	.00	.00	.00	.00	.00
26	.00	.00	.01	.00	.00	.04	.00	.07	.67	.00	.00	.00
27	.00	.01	.00	.00	.00	.00	.03	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.32	.00	.03	.00	.00	.00	.01	.00
29	.00	-----	.00	.00	.17	.00	.00	.00	.00	.00	.06	.00
30	.00	-----	.07	.00	.50	.00	.00	.00	.00	.43	.00	.15
31	.00	-----	.30	-----	.05	-----	.00	.35	-----	.29	-----	.00
TOTAL	.35	.16	2.02	5.05	2.50	2.68	1.93	1.35	5.55	1.89	.23	1.16
ST. AVE.	.44	.85	1.19	2.60	2.90	4.17	1.48	2.62	5.87	1.48	1.53	1.04
NOTES:												
YEARLY PRECIPITATION 24.87 INCHES. PRECIPITATION VALUES ARE A THIESSEN WEIGHTED AVERAGE OF 32 GAGES ON THE WATERSHED.												
1967 MEAN DAILY DISCHARGE (cfs)						CHICKASHA, OKLAHOMA WATERSHED 121 AT GRACEMONT						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	3.9	6.9	7.4	13.	* 12.	6.9E	1.1	.1	.1	1.1	3.9	3.5
2	3.9	6.4	7.4	11.	11.	5.1E	1.1	.1	1.3	.7	* 2.1	3.1
3	4.6	5.9	7.4	* 6.4	12.	3.9E	1.1	.2	9.1	.2	2.1	2.5
4	* 4.6	5.9	5.1	3.1	23.	3.5E	1.1	.5	2.4	.3	2.1	* 2.5
5	4.6	5.9	5.9	3.1	4.7	* 3.1E	1.3	.1	3.5	1.1	1.6	2.8
6	4.6	4.2E	6.4	1.1	39.	3.1E	.2	.2	* .7	.5	1.3	2.8
7	4.2	5.1	4.6	1.1	19.	2.8E	.3	* .1	.3	8.9	1.6	2.8
8	3.7E	5.5	3.1	2.1	* 12.	2.5E	.3	* .1	.9	5.0	1.6	2.8
9	3.4E	5.1	4.2	2.5	7.4	1.9E	.9	.1	.2	1.6	1.9	2.8
10	3.2E	4.6	2.1	15.	6.9E	1.9E	.7	.1	.1	.7	2.8	2.5
11	3.7E	5.5	1.6	* 9.5	6.4E	1.6	* .7	.1	.1	1.1	2.5	3.5
12	4.6	4.6	4.6	* 12.0	6.4E	2.5	.3	.1	.5	1.3	2.1	3.5
13	5.5	* 4.6	* 5.1	* 14.4	5.9E	2.1	.1	.3	.9	1.3	2.1	2.5
14	5.5	9.5	3.1	7.2	5.5E	2.1	.1	.1	7.4	1.3	1.9	3.1
15	5.5	14.	3.1	4.4	5.1E	2.1	.2	.1	7.9	1.3	1.9	2.1
16	* 5.5	11.	4.2	30.	* 4.6E	2.1	.2	.1	.2	1.1	2.1	2.5
17	5.2	5.9	3.9	* 22.	5.1E	2.1	.1	.3	.5	1.1	1.9	5.1
18	4.6E	4.6	3.5	16.	* 5.5E	2.1	.9	.1	.3	1.1	1.9	6.9
19	4.0E	5.1	5.5	37.	5.5E	2.1	1.1	.1	.1	* 1.1	1.9	5.1
20	4.6E	3.9	16.	43.	5.1E	1.9	1.1	.1	.3	1.1	* 2.1	5.1
21	5.1	* 8.4	11.	22.	4.2E	1.6	4.6	* .1	18.	1.1	2.5	4.6
22	5.9	7.9	29.	14.	* 3.9E	1.6	1.6	.1	2.8	1.1	2.8	4.2
23	5.5	* 8.4E	19.	13.	3.9E	2.1	.1	.1	.7	1.3	3.1	4.6
24	5.5	7.9E	13.	14.	3.9E	2.5	* .1	.1	.1	1.1	2.5	4.2
25	5.1	7.9E	10.	12.	3.5E	9.5	.1	.1	.1	.9	2.5	4.2
26	7.9	7.4E	24.	12.	3.5E	8.4	.1	.1	* 7.6	1.1	2.5	4.2
27	7.9	* 6.9E	16.	11.	3.5E	7.4	.1	.1	20.	1.1	2.1	4.6
28	7.9	* 6.9E	14.	11.	3.5E	3.1	.1	.1	12.	1.1	2.1	4.2
29	7.9	-----	11.	11.	3.5E	2.8	.1	.1	3.9	1.3	2.5	4.2
30	* 7.9	-----	6.9	11.	12. E	1.6	.1	.1	2.1	1.3	3.1	5.1
31	7.4	-----	11.	-----	* 14. E	-----	.1	.3	-----	2.8	-----	8.4
MEAN	5.3	6.6	8.7	36	9.8	3.2	.6	.1	4.2	1.5	2.2	3.9
INCHES	.030	.034	.050	.334	.056	.018	.004	.001	.023	.009	.012	.022
NOTES: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .0001806. TO CONVERT DISCHARGE IN INCHES TO AC-FT, MULTIPLY BY 10,980. YEARLY MEAN DISCHARGE, 8.8 CFS. YEARLY DISCHARGE, .593 INCHES. MAXIMUM AND MINIMUM FLOWS EACH MONTH UNDERLINED. * DISCHARGE MEASUREMENTS.												

1967 SELECTED RUNOFF EVENT			CHICKASHA, OKLAHOMA				WATERSHED 121 AT GRACEMONT			
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)
Watershed conditions: The land use of this 206 sq. mi. watershed is not monitored seasonally. For revised watershed conditions, see p. 69.7-4, this publication.			Event of April 12, 1967							
			4-12	PG	.53		4-12	0000	6.9	.0000
				0024	.00	.00		0036	6.9	.0000
				0031	.26	.03		0100	11.2	.0001
				0039	.60	.11		0130	25.6	.0001
				0041	2.10	.18		0212	73.7	.0004
				0045	1.05	.25		0218	392.3	.0006
				0051	2.40	.49		0224	950.9	.0011
				0057	2.40	.73		0230	2020.6	.0022
				0103	1.70	.90		0236	2715.3	.0040
				0105	2.70	.99		0242	3297.5	.0062
				0111	2.50	1.24		0248	3955.7	.0090
				0115	3.60	1.48		0300	4631.7	.0154
				0121	2.50	1.73		0318	5034.1	.0263
				0126	1.44	1.85		0330	5432.2	.0342
				0133	.77	1.94		0348	5170.2	.0462
				0143	1.68	2.22		0354	5067.3	.0500
				0147	2.10	2.36		0430	4904.1	.0726
				0153	1.40	2.50		0442	4365.3	.0795
				0203	1.20	2.70		0448	3826.2	.0826
				0210	2.31	2.97		0500	3664.7	.0882
				0217	2.06	3.21		0506	3037.8	.0908
				0234	1.06	3.51		0512	2561.9	.0929
				0256	1.36	4.01		0518	2110.4	.0946
				0258	.90	4.04		0530	2624.2	.0982
				0305	.34	4.08		0548	2804.2	.1043
				0318	.69	4.23		0600	2617.8	.1084
				0335	.11	4.26		0612	2417.4	.1122
				0403	.04	4.28		0730	2205.4	.1348
				0504	.03	4.31		0830	1888.7	.1502
				0702	.02	4.35		0930	1558.1	.1532
								1000	1346.0	.1686
								1042	1120.9	.1791
								1130	931.4	.1813

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY .000007525. FOR 30-DAY ANTECEDENT P AND Q, SEE P. 69.18-2. FOR ISOHYETAL MAP, SEE P. 69.7-7, THIS PUBLICATION.



MONTHLY PRECIPITATION AND RUNOFF (inches)							CHICKASHA, OKLAHOMA WATERSHED 513 NEAR TABLER AREA — 12,314 ACRES (19.24 SQ. MILES)									
MONTH YEAR		JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	P 1/ Q	.10 .062	.11 .053	2.61 .073	7.02 1.618	3.89 .240	2.28 .082	1.53 .024	1.78 .001	5.43 .076	2.41 .032	.32 .038	1.08 .056	28.56 2.355		
STA AVG	P 2/ Q	.74 .109	1.03 .101	1.70 .169	4.46 .723	2.54 .173	2.11 .067	1.61 .036	5.46 .433	3.84 .253	1.29 .040	.39 .051	.84 .068	26.01 2.223		
MEAN 67 YR	P 3/ Q	1.16	1.22	1.99	3.35	4.99	3.78	2.52	2.69	3.31	2.88	1.74	1.39	31.02		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	4-12	.1451	4-12	.1415	4-12	.2682	4-12	.515	4-12	.597	4-12	.642	4-12	.754	4-9	.875
MAXIMUMS FOR PERIOD OF RECORD 4/																
19 65 TO 19 67	8-8 1965	.1692	8-8 1965	.1637	8-8 1965	.3070	8-7 1965	.562	4-12 1967	.597	4-12 1967	.642	4-12 1967	.754	4-9 1967	.875
NOTES: For the revised watershed conditions, see table on page 69.7-4 of Hydrologic Data for Experimental Agricultural Watersheds in the United States, this publication. For maps, see Hydrologic Data for Experimental Agricultural Watersheds in the United States, 1965, pp. 69.16-8 and 69.7-21. 1/ Precipitation data obtained from a Thiessen weighted average of 18 gages on the watershed. 2/ Precipitation records began Jan. 1965; runoff records began Jan. 1965. 3/ Mean P based on 67-yr (1901-67) U.S. Weather Bureau record period at Chickasha, Okla.; missing months estimated. 4/ Period of record began Jan. 1965.																
MISCELLANEOUS DATA																
RUNOFF PEAK DATA: YEAR (1967): Maximum — Apr. 20, 1,860 cfs (8.77 ft). Minimum — July 26, no flow (1.00 ft). PERIOD OF RECORD: Maximum — Aug. 8, 1965, 2,100 cfs (9.15 ft). Minimum — no flow. PEAK DISCHARGES: (Above base flow of 500 cfs) 1967 — Apr. 12, 1,800 cfs (8.67 ft); Apr. 20, 1,860 cfs (8.77 ft). DAILY TEMPERATURE: See p. 69.7-3.																

Cooperative Research Project of USDA and Oklahoma Agricultural Experiment Station

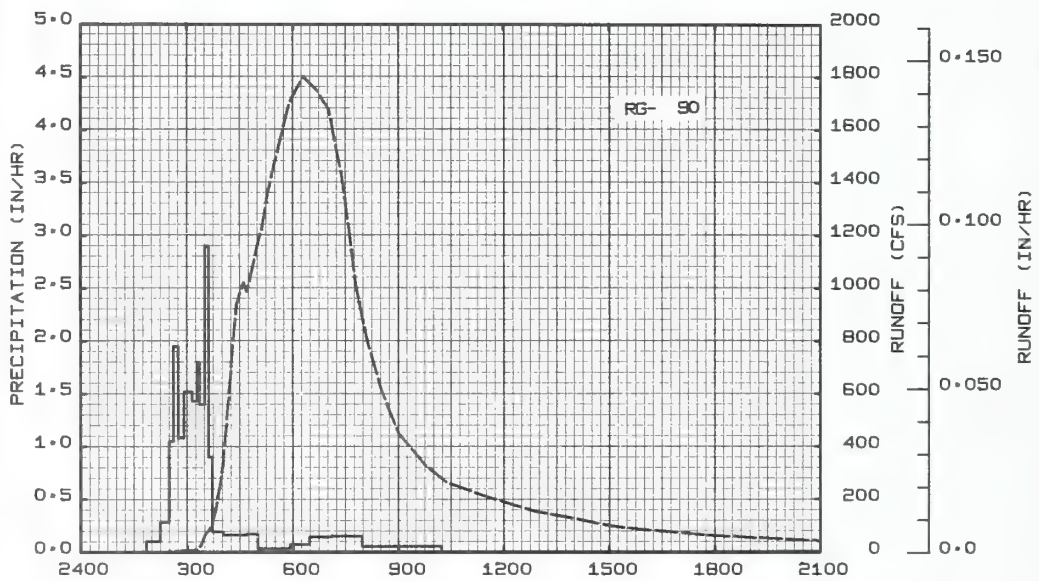
1967 DAILY PRECIPITATION (inches)						CHICKASHA, OKLAHOMA WATERSHED 513 NEAR TABLER						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.00	.09	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.63	.00	.17	.00
3	.00	.00	.00	.00	.00	.00	.15	.02	1.17	.00	.06	.00
4	.00	.00	.00	.00	.00	.00	.00	.97	.32	.00	.00	.00
5	.00	.00	.00	.00	1.07	.00	.23	.00	.69	.00	.00	.00
6	.00	.00	.04	.00	.00	.00	.00	.00	.03	.00	.00	.00
7	.00	.00	.00	.41	.00	.00	.00	.00	.00	.95	.00	.00
8	.00	.02	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	1.05	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.66	.00	.00	.00	.00	.00	.00	.00	.05
11	.00	.00	.00	.00	.00	.00	.00	.02	.00	.00	.00	.00
12	.00	.00	.04	2.60	.00	.07	.00	.00	.00	.00	.00	.00
13	.00	.00	.01	.51	.04	.00	.00	.00	.07	.00	.00	.03
14	.00	.00	.00	.00	.02	.00	.00	.01	.41	.00	.00	.11
15	.00	.00	.00	.00	.00	.00	.02	.00	.00	.46	.00	.06
16	.00	.00	.00	.00	.00	.00	.26	.00	.12	.00	.00	.59
17	.00	.00	.00	.00	.00	.00	.00	.50	.00	.00	.00	.01
18	.00	.00	.00	.00	.00	.12	.47	.00	.00	.00	.00	.00
19	.00	.00	.31	.35	.01	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	1.44	1.16	.00	.00	.00	.80	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.04	.02	.12	.00	.00	.02
22	.00	.00	.90	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.26	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.47	.00	.00	1.28	.00	.00	.00	.00	.00	.00
26	.10	.00	.11	.00	.00	.55	.00	.00	1.07	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.36	.00	.00	.00	.02	.00
29	.00		.00	.00	.62	.00	.00	.00	.00	.01	.07	.00
30	.00		.21	.00	.77	.00	.00	.00	.00	.70	.00	.21
31	.00		.52		.20		.00	.24		.29		.00
TOTAL	.10	.11	2.61	7.02	3.89	2.28	1.53	1.78	5.43	2.41	.32	1.08
STAAV	.74	1.03	1.70	4.46	2.54	2.11	1.61	5.46	3.84	1.29	.39	.84
NOTES												
YEARLY PRECIPITATION 28.56 INCHES. PRECIPITATION VALUES ARE A THIESSEN WEIGHTED AVERAGE OF 18 GAGES ON THE WATERSHED.												

1967 MEAN DAILY DISCHARGE (cfs)						CHICKASHA, OKLAHOMA WATERSHED 513 NEAR TABLER						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	1.2	1.1	1.0	1.9	3.2	2.5	.7	.0	.0	.2	.9	.9
2	1.1	1.1	.8	1.1	2.9	2.0	.7	.0	.0	.2	.6	.7
3	1.0	1.1	.9	1.0	2.8	1.9	.9	.0	.1	.2	.7	.6
4	1.0	1.1	1.1	.9	2.7	1.8	.9	.0	4.8	.2	.7	.7
5	1.0	1.0	1.1	.8	6.6	1.5	1.2	.4	9.9	.2	.6	.7
6	1.0	.9	1.0	.8	3.3	1.3	.8	.2	.9	.2	.6	.8
7	.9	.9	1.0	1.0	5.2	1.2	.6	.0	.3	5.6	.6	.8
8	.9	1.0	.9	1.5	3.5	1.0	.7	.0	.2	1.0	.6	.9
9	.8	1.0	.9	1.3	2.9	.8	.6	.0	.1	.6	.6	.8
10	1.0	1.0	1.0	3.2	2.6	.9	.5	.0	.1	.4	.6	.8
11	1.0	1.0	.9	3.2	2.4	1.0	.3	.0	.0	.4	.6	.8
12	1.1	1.0	.9	* 3.28	2.2	1.0	.2	.0	.0	.3	.6	.8
13	1.1	.9	.9	6.0	2.4	1.1	.2	.0	.0	.3	.5	.8
14	1.1	.9	.9	1.2	2.8	.9	.1	.0	.1	.3	.6	.8
15	1.0	1.0	.7	6.6	2.3	.7	.1	.0	.4	.4	.6	1.0
16	1.0	.9	.7	4.9	2.1	.7	.2	.0	.4	.6	.6	1.2
17	.9	1.0	.7	3.5	1.9	.6	.4	.0	.3	.4	.6	1.1
18	1.0	1.0	.7	3.0	1.9	.6	.6	.0	.2	.3	.6	2.1
19	1.0	1.0	.8	3.9	1.7	.6	.9	.0	.2	.3	.6	1.0
20	1.1	1.0	1.1	* 2.62	9.5	.5	.6	.0	.3	.2	.6	1.0
21	1.2	.9	1.0	.45	5.0	.4	.4	.0	6.1	.3	.7	1.0
22	1.1	1.0	2.6	1.3	2.4	.4	.4	.0	.6	.2	.7	.9
23	1.1	.9	3.8	7.2	2.1	.4	.2	.0	.3	.2	.7	.9
24	1.1	.9	1.3	5.4	1.9	.6	.1	.0	.2	.2	.7	.9
25	1.0	.9	1.9	5.1	1.6	9.2	.0	.0	.2	.2	.8	.9
26	1.1	.9	2.2	4.6	1.4	4.3	.0	.0	4.7	.2	.7	.9
27	1.1	1.0	1.2	4.0	1.5	1.8	.0	.0	7.5	.2	.7	1.0
28	1.0	1.2	1.0	3.9	1.5	1.1	.0	.0	.6	.2	.7	.9
29	1.0		.9	4.0	2.9	.9	.0	.0	.4	.3	.8	.9
30	1.0		.9	3.9	3.4	.7	.0	.0	.3	.5	1.0	1.1
31	1.1		2.8		6.1		.0	.0		1.8		1.1
MEAN	1.0	1.0	1.2	2.8	4.0	1.4	.4	.0	1.3	.5	.7	.9
INCHES	.062	.053	.073	1.618	.240	.082	.024	.001	.076	.032	.038	.056
NOTES TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .001933. TO CONVERT DISCHARGE IN INCHES TO AC-FT, MULTIPLY BY 1.026. YEARLY MEAN DISCHARGE, 3.3 CFS. YEARLY DISCHARGE, 2.355 INCHES. MAXIMUM AND MINIMUM FLOWS EACH MONTH UNDERLINED. * DISCHARGE MEASUREMENTS.												

1967 SELECTED RUNOFF EVENTS			CHICKASAW, OKLAHOMA				WATER SHEED 513 NEAR TABLER			
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)
			Event of April 12, 1967							
			4-12	0000	0.0	0.0	4-12	0230	2.2	0.000
				0100	0.0	0.0		0300	4.0	0.001
				0200	0.0	0.0		0318	8.9	0.003
				0237	1.06	0.25		0324	26.2	0.004
				0240	1.95	0.51		0330	63.8	0.007
Watershed conditions: The land use of this 19.24 sq. mi. watershed is not monitored seasonally. For revised watershed conditions, see p. 69.7-4, this publication.				0255	1.06	0.57		0342	99.0	0.011
				0300	1.02	1.2		0348	148.2	0.014
				0316	1.43	1.21		0354	226.8	0.018
				0321	1.80	1.36		0400	329.7	0.021
				0330	1.40	1.57		0406	404.1	0.024
				0340	2.50	1.86		0412	511.3	0.027
				0342	0.0	1.86		0418	790.9	0.031
				0401	0.0	2.01		0424	935.4	0.036
				0442	0.16	2.12		0436	1021.7	0.040
				0500	0.17	2.17		0442	988.3	0.040
				0555	0.03	2.20		0506	1217.5	0.044
				0620	0.7	2.74		0518	1304.1	0.047
				0700	0.14	2.33		0536	1540.3	0.052
				0758	0.15	2.46		0554	1707.7	0.057
				0802	0.05	2.51		0618	1811.2	0.060
				1014	0.05	2.57		0642	1744.2	0.061
								0700	1679.0	0.060
								0724	1419.0	0.056
								0736	1217.5	0.050
								0748	1004.8	0.045
								0800	809.1	0.040
								0830	610.3	0.035
								0900	443.8	0.028
								0943	309.7	0.021
								1024	202.4	0.015
								1142	82.6	0.005
					1204	153.7	0.008			
					1518	93.6	0.005			
					1748	63.0	0.003			
					1924	51.1	0.002			

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY .00008054. FOR 30-DAY ANTECEDENT P AND Q, SEE P. 69.19-2. FOR ISOHYETAL MAP, SEE P. 69.7-7, THIS PUBLICATION.

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY .00008054. FOR 30-DAY ANTECEDENT P AND Q, SEE P. 69.19-2. FOR ISOHYETAL MAP, SEE P. 69.7-7, THIS PUBLICATION.

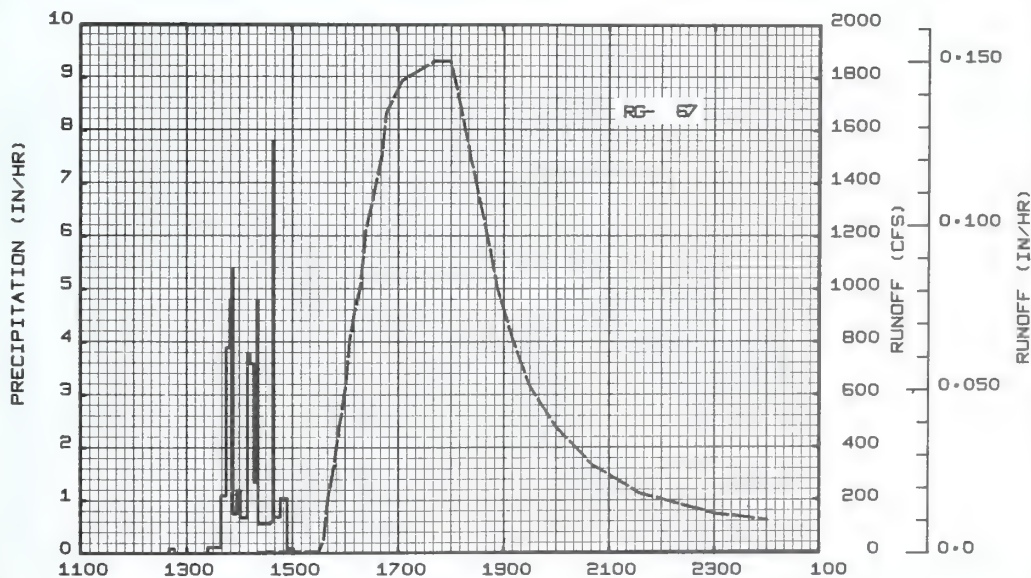


APRIL 12, 1967

CHICKASHA, OKLAHOMA WATERSHED 513

1967 SELECTED RUNOFF EVENTS			CHICKASHA, OKLAHOMA				WATERSHED 513 NEAR TABLER			
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)
Watershed conditions: The land use of this 19.24 sq. mi. watershed is not monitored seasonally. For revised watershed conditions, see p. 69.7-4, this publication.			Event of April 20, 1967							
			4-20	RG	67		4-20			
				1240	.00	.30		1424	3.6	.0000
				1247	.09	.01		1448	5.7	.0001
				1324	.00	.01		1530	6.6	.0005
				1339	.12	.34		1536	48.4	
				1345	1.10	.15		1542	116.2	.118
				1349	3.90	.41			325.7	.304
				1352	4.80	.65		1554	475.3	.3073
				1353	5.40	.74		1600	625.7	.0117
				1357	.75	.79		1606	805.4	.0175
				1401	1.20	.87		1612	923.5	.0244
				1409	.68	.96		1618	1004.9	.0322
				1412	3.80	1.15		1624	1217.5	.0412
				1416	3.60	1.39		1642	1492.1	.0739
				1420	1.35	1.48		1648	1667.7	.0866
				1421	4.80	1.56		1706	1789.4	.1284
				1435	.56	1.69		1742	1861.2	.2166
				1438	.60	1.72		1800	1861.2	.2616
				1439	7.80	1.85		1806	1789.4	.2763
				1446	.69	1.93		1824	1492.1	.3159
				1454	1.05	2.07		1842	1212.8	.3486
				1501	.09	2.08		1854	1004.9	.3664
								1912	805.4	.3883
								1930	632.0	.4057
								2000	475.3	.4280
								2042	332.5	.4507
								2136	225.0	.4710
								2300	146.8	.4919
								2400	121.3	.5027
							4-21	0154	90.6	.5189

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY .00008054. FOR 30-DAY ANTECEDENT P AND Q, SEE P. 69.19-2, THIS PUBLICATION.



APRIL 20-21, 1967

CHICKASHA, OKLAHOMA WATERSHED 513

CHICKASHA, OKLAHOMA WATERSHED 514 NEAR TABLER

LOCATION: WATERSHED — 514 near Highway 62 in the vicinity of Tabler, in Grady County, Okla.; tributary of East Bitter Creek; Washita River; Red River Basin.

GAGING STATION — NW¼ sec. 26, T. 7 N., R. 6 W., lat. 35°03'25", long. 97°48'31".

AREA: 7,225.6 acres (11.29 sq. miles). See composite map, page 69.7-21 of Hydrologic Data for Experimental Agricultural Watersheds in the United States, 1965 publication.

SLOPES:	Slope — Percent	0-1	1-3	3-5	5-8	8-12	12+
	Percent of area	9	4	25	39	22	1

1/

SOILS: Residual, derived from siltstone, shale, sandstone, and terrace and flood-plain alluvium.

Soil	Percent of area	Topsoil			Subsoil		Substratum		Internal drainage
		Avg. depth (in.)	Structure	Permeability	Structure	Permeability	Avg. depth to (in.)	Permeability	
Grant-Kingfisher Zaneis silt loams	31	45	Moderate medium granular	Moderately slow	Moderate medium blocky	Moderately slow	45	Moderately slow	Slow
Nash-Quinlan loams	53	22	Moderate medium granular	Moderate	Moderate medium subangular blocky	Moderate	22	Moderate	Medium
Port silt loams	8	60+	Moderate fine granular	Moderate	Moderate granular	Moderate	7	Moderate	Medium
Renfrow silt loams	8	14	Moderate fine granular	Moderate	Moderate fine blocky	Moderately slow	50	Moderately slow	Slow

EROSION:	Erosion class	1	2	3	4
	Percent of area	28	18	41	13

1/

LAND CAPABILITY:	Class	I	II	III	IV	V	VI	VII
	Percent of area	9	4	27	26	4	28	2

1/

1/ Information presented for general descriptive purposes and not intended to be precise data.

GEOLOGY: The geologic formations and their exposed surface area in percent are: Alluvium, 8.0, Cloud Chief, 0.0; Rush Springs, 0.0; Dog Creek, Blaine and Marlow, 0.0; and Chickasha, 92.0. The tributary contains only two geologic formations, therefore, the geology is relatively simple. The quality of surface and ground water is relatively good. See description of hydrogeology and general geology map in Hydrologic Data for Experimental Agricultural Watersheds in the United States, 1962, USDA Misc. Pub. 1070, pp. 69.7-8 and 9. Source of data: Oklahoma Geological Survey, Norman, Okla.; Bulletins 73, 87 and Circular 61.

SURFACE DRAINAGE: Good; length of principal waterway 8.55 miles.

CHARACTER OF FLOW: Spring fed intermittent interrupted.

INSTRUMENTATION: Precipitation: Twenty-two recording weighing type gages, 4 of which have a 24-hour time scale and 18 which have a 12-hour time scale. Runoff: The headwater gage consists of a Stevens A-35 water level recorder with bubble gage and servomanometer with 9.6 inches per day time scale. High flow measurements are made by lowering a current meter from a cableway which is operated from the left bank of the stream. Low flow measurements are made with a current meter by wading. Staff gages placed in the stream channel are used for outside reference points for the headwater and tailwater gages. The tailwater gage consists of a Stevens A-35 water level recorder with a 9.6 inches per day time scale.

WATERSHED CONDITIONS: Crop land is alfalfa, small grains, and row crop rotation. The remaining is used for pasture or range. Approximately 43% is thin steep land that has been overgrazed.

Percent of watershed in						Pasture or range - 96
Cultivation - 4						
Alfalfa - 44	Sowed crops - 33			Row crops - 23		Classification of range site condition based on production
Average yield ton/ac	Wheat yield bu/ac	Oats yield bu/ac	Barley yield bu/ac	Milo yield bu/ac	Cotton yield-lint lb/ac	
						Exc. - 4% Good - 55%
						Fair - 36% Poor - 5%
3-4	35	45	50	30	300	The general practice for good range utilization is 1 animal unit per 10 acres.

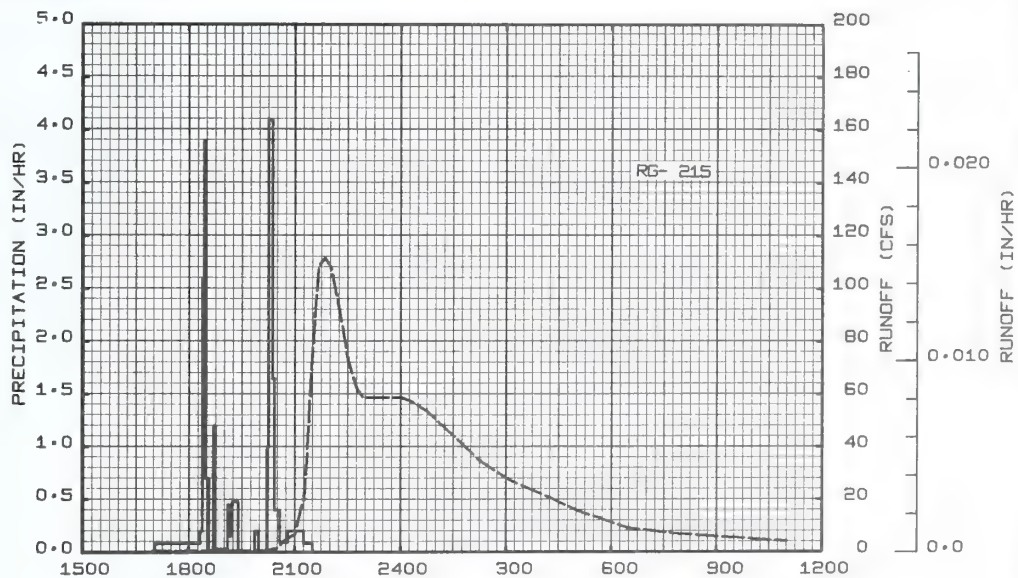
GENERALLY REPRESENTS: Small tributary watersheds of the Central Great Plains Winter Wheat and Range Region, specifically the Central Rolling Red Prairies land resource area (H-80) in Kansas, Oklahoma, and Texas.

MONTHLY PRECIPITATION AND RUNOFF (inches)						CHICKASHA, OKLAHOMA WATERSHED 514 NEAR TABLER AREA — 7,225.6 ACRES (11.29 SQ. MILES)										
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	P1/ Q	.09	.08	2.07	6.25	4.60 .201	2.05 .051	1.60 .022	1.30 .003	5.47 .157	2.71 .073	.31 .091	1.11 .117	27.64		
STA AVG	P2/ Q															
MEAN 67 YR	P3/ Q	1.16	1.22	1.99	3.35	4.99	3.78	2.52	2.69	3.31	2.88	1.74	1.39	31.02		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	5-5	.0082	5-5	.0134	5-5	.0220	5-5	.047	5-5	.057	5-5	.062	9-3	.101	9-2	.108
MAXIMUMS FOR PERIOD OF RECORD																
19 67 TO 19 --	5-5 1967	.0082	5-5 1967	.0134	5-5 1967	.0220	5-5 1967	.047	5-5 1967	.057	5-5 1967	.062	9-3 1967	.101	9-2 1967	.108
NOTES: Watershed conditions same as that described on previous page under WATERSHED CONDITIONS. For maps see 1965 edition of Hydrologic Data for Experimental Agricultural Watersheds in the United States, pp. 69.16-8 and 69.7-21. 1/ Precipitation records obtained from a Thiessen weighted average of 22 gages on the watershed. 2/ Precipitation records began Jan. 1967; runoff records began May 1967. 3/ Mean P based on 67-yr (1901-1967) U. S. Weather Bureau record period at Chickasha, Okla.; missing months estimated.																
MISCELLANEOUS DATA																
RUNOFF PEAK DATA: YEAR (1967): Maximum — May 5, 111.7 cfs (7.22 ft). Minimum — No flow - periodically. PERIOD OF RECORD: Maximum — May 5, 1967, 111.7 cfs (7.22 ft). Minimum — No flow. PEAK DISCHARGES: (Above base flow of 100 cfs) 1967 — 111.7 cfs (7.22 ft). DAILY TEMPERATURE: See p. 69.7-3.																

1967 DAILY PRECIPITATION (inches)						CHICKASHA, OKLAHOMA WATERSHED 514 NEAR TABLER						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.00	.07	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.73	.00	.17	.00
3	.00	.00	.00	.00	.00	.00	.19	.00	1.20	.00	.03	.00
4	.00	.00	.00	.00	.00	.00	.00	.74	.48	.00	.00	.00
5	.00	.00	.00	.00	1.23	.00	.33	.00	.67	.00	.00	.00
6	.00	.00	.04	.00	.00	.00	.00	.00	.04	.00	.00	.00
7	.00	.00	.00	.36	.00	.00	.00	.00	.01	.90	.00	.00
8	.00	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	1.09	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.96	.00	.00	.00	.00	.00	.00	.00	.05
11	.00	.00	.00	.00	.00	.00	.00	.02	.00	.00	.00	.00
12	.00	.00	.00	2.49	.00	.08	.00	.00	.00	.00	.00	.00
13	.00	.00	.06	.52	.04	.00	.00	.00	.05	.00	.00	.03
14	.00	.00	.00	.00	.01	.00	.00	.00	.49	.00	.00	.13
15	.00	.00	.00	.00	.00	.00	.01	.00	.00	.82	.00	.07
16	.00	.00	.00	.00	.00	.00	.26	.00	.14	.00	.00	.62
17	.00	.00	.00	.00	.00	.00	.00	.33	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.08	.45	.00	.00	.00	.00	.00
19	.00	.00	.22	.30	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.53	1.46	.00	.00	.00	.56	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.10	.00	.11	.00	.00	.01
22	.00	.00	.78	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.21	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.41	.00	.00	.82	.00	.00	.00	.00	.00	.00
26	.09	.00	.07	.00	.00	.86	.00	.00	.99	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.25	.00	.00	.00	.03	.00
29	.00	-----	.00	.00	.71	.00	.00	.00	.00	.02	.08	.00
30	.00	-----	.05	.00	.90	.00	.00	.00	.00	.63	.00	.20
31	.00	-----	.44	-----	.25	-----	.00	.21	-----	.34	-----	.09
TOTAL	.09	.08	2.07	6.25	4.60	2.05	1.60	1.30	5.47	2.71	.31	1.11
STA AV												
NOTES:												
YEARLY PRECIPITATION 27.64 INCHES. PRECIPITATION VALUES ARE A THIESSEN WEIGHTED AVERAGE OF 22 GAGES ON THE WATERSHED. FIRST YEAR OF RECORD THEREFORE NO STA AV SHOWN.												
1967 MEAN DAILY DISCHARGE (cfs)						CHICKASHA, OKLAHOMA WATERSHED 514 NEAR TABLER						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1					.268	.838	.155	.022	.022	.195	.835	1.28
2					.319	.609	.155	.023	.191	.184	.670	1.22
3					.324	.565	.223	.023	6.61	.216	.691	.922
4					.319	.420	.268	.023	6.87	.197	.680	.962
5					6.49	.384	.670	.033	17.7	.162	.665	1.16
6					12.8	.378	.271	.034	.674	.177	.647	1.05
7					.948	.378	.184	.024	.373	3.65	.630	1.07
8					.607	.354	.209	.024	.226	.545	.704	1.02
9					.518	.262	.121	.028	.166	.345	.751	1.18
10					.427	.257	.275	.027	.122	.282	.818	1.05
11					.416	.253	.323	.025	.096	.281	.784	1.09
12					.415	.272	.443	.025	.080	.307	.767	1.13
13					.469	.274	.407	.025	.074	.281	.809	.980
14					.572	.266	.520	.025	.437	.301	.852	.979
15					.545	.242	.516	.025	.391	7.17	.843	1.05
16					.534	.235	.299	.026	.397	.959	.893	1.28
17					.533	.157	.198	.026	.306	.448	.889	1.70
18					.537	.067	.267	.026	.254	.359	.905	1.49
19					.489	.038	.410	.026	.220	.354	1.00	1.38
20					15.5	.021	.263	.026	.230	.327	1.05	1.33
21					2.53	.019	.167	.027	.929	.338	1.04	1.13
22					.962	.024	.133	.027	.352	.348	1.07	.833
23					.644	.032	.105	.027	.256	.396	1.13	.931
24					.467	.421	.075	.027	.242	.385	1.16	1.07
25					.384	2.41	.026	.028	.226	.353	1.18	1.07
26					.302	4.69	.022	.028	3.18	.410	1.17	1.09
27					.325	.733	.022	.028	5.96	.351	1.13	1.09
28					.356	.360	.022	.028	.437	.432	1.36	1.16
29					1.09	.253	.022	.028	.264	.463	1.25	1.16
30					3.12	.197	.022	.029	.244	.640	1.28	1.30
31					7.69	-----	.022	.029	-----	1.18	-----	1.20
MEAN					1.96	.514	.220	.027	1.58	.711	.925	1.14
INCHES					.201	.051	.022	.003	.157	.073	.091	.117
NOTES TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .003294. TO CONVERT DISCHARGE IN INCHES TO AC-FT, MULTIPLY BY 602.1. MAXIMUM AND MINIMUM FLOWS EACH MONTH UNDERLINED.												

1967 SELECTED RUNOFF EVENT			CHICKASHA, OKLAHOMA				WATERSHED 514 NEAR TABLER			
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)
Watershed conditions: See p. 69.20-1, this publication.			Event of May 5, 1967							
			5- 5	RG	215		5- 5	1700	.34	1/.0000
				1703	.00	.00		1842	.66	.0001
				1820	.08	.10		2030	1.50	.0003
				1823	.20	.11		2045	4.76	.0004
				1826	2.60	.24		2100	6.80	.0006
				1828	3.90	.37				
				1834	.70	.44		2115	20.46	.0011
				1841	.00	.44		2120	34.75	.0014
				1845	1.20	.52		2125	58.83	.0019
				1906	.03	.53		2130	78.49	.0027
				1910	.45	.56		2140	108.40	.0048
				1914	.15	.57		2150	111.74	.0074
				1924	.48	.65		2200	108.40	.0099
				1952	.00	.65		2230	72.97	.0162
				1958	.20	.67		2245	61.91	.0185
				2012	.00	.67		2255	56.83	.0199
				2015	1.00	.72		2300	56.83	.0205
				2021	4.10	1.13	5- 6	0000	56.83	.0206
				2025	1.65	1.24		0015	57.63	.0306
				2034	.40	1.30		0045	53.50	.0344
				2047	.09	1.32		0145	41.05	.0409
				2114	.20	1.41		0215	34.75	.0435
				2130	.08	1.43		0300	28.15	.0468
								0415	20.81	.0509
								0500	15.94	.0528
								0630	9.00	.0554
								1100	3.95	.0592

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY .0001372. FOR 30-DAY ANTECEDENT P AND Q, SEE P. 69.20-3, THIS PUBLICATION. 1/ SOME INTERMEDIATE BREAKPOINTS HAVE BEEN REMOVED TO SHORTEN THE LISTING.



MAY 5- 6, 1967

CHICKASHA, OKLAHOMA WATERSHED 514

CHICKASHA, OKLAHOMA WATERSHED 5141 NEAR MIDDLEBURG

LOCATION: WATERSHED — Small watershed near Highway 62 in the vicinity of Middleburg, in Grady County, Okla.; tributary of East Bitter Creek; Washita River; Red River Basin.

GAGING STATION — NE $\frac{1}{4}$ sec. 13, T. 7 N., R. 6 W., lat. 35°04'49", long. 97°46'33", at artificial control.

AREA: 4,064 acres (6.35 sq. miles). See composite map, page 69.7-21 of Hydrologic Data for Experimental Agricultural Watersheds in the United States, 1965 publication.

SLOPES:	Slope — Percent	0-1	1-3	3-5	5-8	8-12	12 and above	
	Percent of area	10	5	40	33	12	0	1/

SOILS: Residual, derived from fine grained sandstone and shale materials. They are deep, fine textured soils on gently rolling to rolling slopes with more shallow soils on the breaks. 1/

Soil	Per- cent of area	Topsoil			Subsoil		Substratum		Internal drainage
		Avg. depth (in.)	Structure	Permea- bility	Structure	Permea- bility	Avg. depth to (in.)	Permea- bility	
Nash-Quinlan loam	46	8	Moderate medium granular	Moderate	Moderate medium granular	Moderate	30	Moderate	Medium
Kingfisher Grant-Zaneis light silt loam	25	14	Moderate medium granular	Moderate	Moderate fine subangular blocky	Moderate	43	Moderately slow	Slow
Renfrow Kirkland silt loam	19	16	Moderate fine granular	Moderate	Moderate fine blocky	Moderately slow	50	Moderately slow	Slow
Port silt loam	10	20	Moderate fine	Moderate	Moderate medium granular	Moderate	45	Moderate	Medium

EROSION:	Erosion class	1	2	3	4	
	Percent of area	10	14	61	15	1/

LAND CAPABILITY:	Class	I	II	III	IV	V	VI	VII	
	Percent of area	10	4	16	8	7	55	0	1/

1/ Information presented for general descriptive purposes and not intended to be precise data.

GEOLOGY: The geologic formations and their exposed surface area in percent are: Alluvium, 5.0; Cloud Chief 0.0; Rush Springs, 0.0; Dog Creek, Blaine and Marlow, 0.0; and Chickasha, 95.0. The tributary contains only two geologic formations; therefore, the geology is relatively simple. The quality of surface and ground water is relatively good. See description of hydrogeology and general geology map in Hydrologic Data for Experimental Agricultural Watersheds in the United States, 1962, USDA Misc. Pub. 1070, pp. 69.7-8 and 9. Source of data: Oklahoma Geological Survey, Norman, Okla.; Bulletins 73, 87 and Circular 61.

SURFACE DRAINAGE: Good, length of principal waterway 5.9 miles.

CHARACTER OF FLOW: Perennial.

INSTRUMENTATION: **Precipitation:** Seventeen recording weighing type gages of which 3 have a 24-hour time scale and 14 have a 12-hour time scale. **Runoff:** The headwater gage consists of a Stevens 2A-35 water level recorder with 9.6 inches per day time scale. The 2A-35 recorder installed on an 18" well is used to record both the headwater and tail-water elevations. Artificial control consists of a "V" notch weir with 3:1 side slopes of reinforced concrete. High flow measurements are made from a bridge just upstream from the weir. Low flow measurements are made with a current meter by wading. Measurements are made during extreme low flow by attaching a portable flume to the weir. Tape down for the headwater is made from an outside gage reference point on the bridge. Tape downs are also made from reference points inside the gage wells for both the headwater and tailwater gages.

WATERSHED CONDITIONS: 100% of the watershed is used for pasture or range. Approximately 40% is thin steep land that has been grazed heavily. Tall, intermediate, and short grasses are prevalent. There are 23 farm ponds in this watershed. The following table shows the land use:

Percent of watershed in pasture or range - 100	
Classification of range site condition based on production	
Exc. - 5%	Good - 60%
Fair - 30%	Poor - 5%
The general practice for good range utilization is 1 animal unit per 12 acres.	

GENERALLY REPRESENTS: Small tributary watersheds of the Central Great Plains Winter Wheat and Range Region specifically the Central Rolling Red Prairies land resource area (H-80) in Kansas, Oklahoma, and Texas.

MONTHLY PRECIPITATION AND RUNOFF (inches)						CHICKASHA, OKLAHOMA WATERSHED 5141 NEAR MIDDLEBURG AREA — 4,064 ACRES (6.35 SQ. MILES)								
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1967	P ¹ / _Q	.09 .048	.09 .040	1.97 .044	6.47 .853	4.35 .151	2.13 .032	1.60 .012	1.42 .001	5.36 .087	2.87 .054	.32 .037	1.11 .051	27.78 1.410
STA AVG	P ² / _O													
MEAN	P ³ / _O													
67 YR		1.16	1.22	1.99	3.35	4.99	3.78	2.52	2.69	3.31	2.88	1.74	1.39	31.02

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	4-12	.2760	4-12	.2456	4-12	.3895	4-12	.511	4-12	.554	4-12	.573	4-12	.624	4-9	.756

MAXIMUMS FOR PERIOD OF RECORD																
1967 TO	4-12		4-12		4-12		4-12		4-12		4-12		4-12		4-9	
19--	1967	.2760	1967	.2456	1967	.3895	1967	.511	1967	.554	1967	.573	1967	.624	1967	.756

Notes: Watershed conditions same as that described on previous page under WATERSHED CONDITIONS. For Watershed map, see p. 69.21-6. For composite map see 1965 edition of Hydrologic Data for Experimental Agricultural Watersheds in the United States, p. 69.7-21. 1/ Precipitation data obtained from a Thiessen weighted average of 17 gages on the watershed. 2/ Precipitation records began Jan. 1967; runoff records began Jan. 1967. 3/ Mean P based on 67-yr (1901-67) U.S. Weather Bureau period of record at Chickasha, Okla.; missing months estimated.

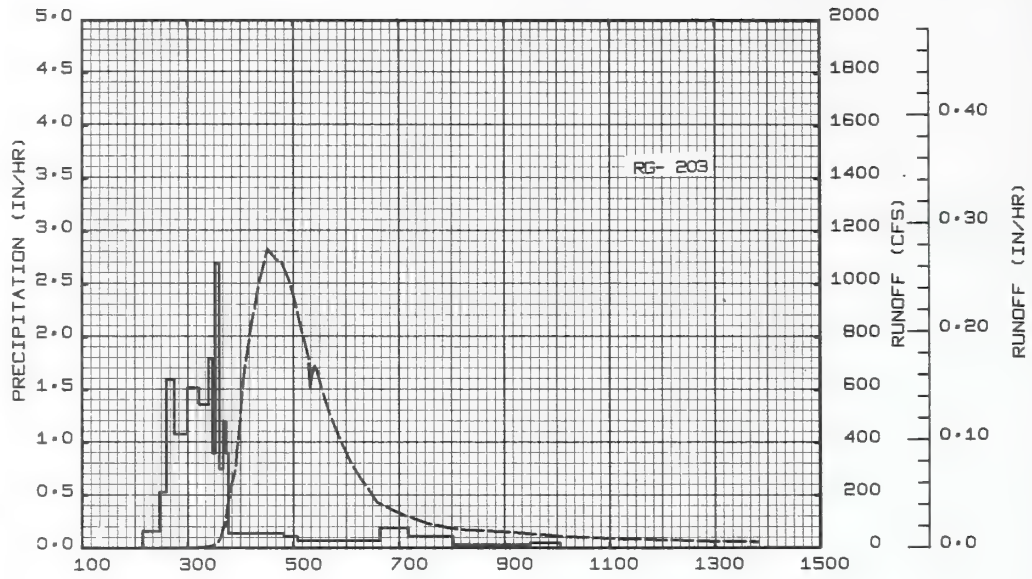
MISCELLANEOUS DATA														
<u>RUNOFF PEAK DATA:</u> YEAR (1967): Maximum — April 12, 1,131 cfs (7.47 ft). Minimum — No flow - periodically.														
PERIOD OF RECORD: Maximum — April 12, 1967, 1,131 cfs (7.47 ft). Minimum — No flow.														
PEAK DISCHARGES: (Above base flow of 100 cfs) 1967 — April 12, 1,131 cfs (7.47 ft).														
<u>DAILY TEMPERATURE:</u> See p. 69.7-3.														

1967 DAILY PRECIPITATION (inches)						CHICKASHA, OKLAHOMA WATERSHED 5141 NEAR MIDDLEBURG						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.00	.08	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.62	.00	.16	.00
3	.00	.00	.00	.00	.00	.00	.14	.00	1.17	.00	.04	.00
4	.00	.00	.00	.00	.00	.00	.00	.87	.46	.00	.00	.00
5	.00	.00	.00	.00	1.14	.00	.22	.00	.59	.00	.00	.00
6	.00	.00	.04	.00	.00	.00	.00	.00	.04	.00	.00	.00
7	.00	.00	.00	.40	.00	.00	.00	.00	.02	.99	.00	.00
8	.00	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	1.06	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.94	.00	.00	.00	.00	.00	.00	.00	.05
11	.00	.00	.00	.00	.00	.00	.00	.02	.00	.00	.00	.00
12	.00	.00	.00	2.58	.00	.08	.00	.00	.00	.00	.00	.00
13	.00	.00	.03	.54	.04	.00	.00	.00	.06	.00	.00	.03
14	.00	.00	.00	.00	.02	.00	.00	.00	.48	.00	.00	.12
15	.00	.00	.00	.00	.00	.00	.01	.00	.00	.84	.00	.07
16	.00	.00	.00	.00	.00	.00	.28	.00	.12	.00	.00	.62
17	.00	.00	.00	.00	.00	.00	.00	.31	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.15	.49	.00	.00	.00	.00	.00
19	.00	.00	.21	.30	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.65	1.33	.00	.00	.00	.59	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.17	.01	.12	.00	.00	.01
22	.00	.00	.80	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.20	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00
25	.00	.00	.33	.00	.00	.97	.00	.00	.00	.00	.00	.00
26	.09	.00	.08	.00	.00	.73	.00	.00	1.09	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.28	.00	.00	.00	.03	.00
29	.00	-----	.00	.00	.66	.00	.00	.00	.00	.02	.09	.00
30	.00	-----	.06	.00	.93	.00	.00	.00	.00	.68	.00	.21
31	.00	-----	.42	-----	.23	-----	.00	.21	-----	.34	-----	.00
TOTAL	.09	.09	1.97	6.47	4.35	2.13	1.60	1.42	5.36	2.87	.32	1.11
STA AV												
NOTES												
YEARLY PRECIPITATION 27.78 INCHES. PRECIPITATION VALUES ARE A THIESSEN WEIGHTED AVERAGE OF 17 GAGES ON THE WATERSHED. FIRST YEAR OF RECORD THEREFORE NO STA AV SHOWN.												
1967 MEAN DAILY DISCHARGE (cfs)						CHICKASHA, OKLAHOMA WATERSHED 5141 NEAR MIDDLEBURG						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.314	.324	.191	.345	.292	.371	.080	.002	.000	.079	.308	.297
2	.294	.272	.169	.269	.267	.267	.088	.005	.038	.070	.199	.212
3	.267	.262	.164	.248	.267	.255	.137	.003	1.19	.075	.210	.176
4	.267	.280	.161	.214	.312	.233	.151	.029	1.50	.080	.238	.216
5	.267	.282	.161	.194	2.02	.182	.266	.048	3.84	.080	.267	.300
6	.279	.236	.192	.174	8.39	.153	.152	.017	.237	.074	.260	.235
7	.267	.248	.213	.277	.594	.135	.108	.005	.131	1.58	.196	.237
8	.255	.262	.208	.352	.463	.117	.091	.005	.115	.268	.169	.232
9	.255	.263	.247	4.87	.351	.092	.066	.006	.098	.150	.210	.321
10	.267	.262	.227	14.1	.327	.094	.049	.012	.072	.121	.215	.255
11	.273	.260	.233	.583	.279	.100	.027	.009	.053	.121	.205	.253
12	.277	.246	.197	97.4	.281	.126	.014	.002	.042	.120	.200	.253
13	.287	.240	.205	8.94	.346	.135	.012	.001	.041	.106	.195	.243
14	.282	.246	.205	1.58	.409	.089	.011	.001	.341	.087	.190	.282
15	.267	.203	.185	.914	.303	.059	.009	.001	.181	3.50	.190	.338
16	.290	.205	.161	.669	.258	.049	.046	.000	.178	.439	.165	.399
17	.342	.221	.165	.544	.215	.039	.049	.011	.154	.168	.161	.579
18	.186	.237	.180	.481	.165	.039	.161	.004	.123	.138	.160	.366
19	.205	.253	.217	.705	.139	.038	.177	.001	.099	.126	.159	.299
20	.242	.218	.373	6.41	4.53	.032	.069	.001	.117	.111	.172	.272
21	.265	.224	.248	1.84	.883	.013	.057	.005	.587	.090	.186	.252
22	.256	.245	.505	.807	.382	.015	.098	.005	.137	.075	.189	.230
23	.243	.223	.491	.561	.267	.045	.030	.004	.106	.110	.197	.243
24	.241	.210	.265	.473	.202	.032	.012	.008	.093	.091	.215	.262
25	.217	.210	.315	.486	.143	.004	.005	.005	.078	.114	.209	.258
26	.237	.230	.399	.458	.114	1.66	.005	.002	3.45	.104	.204	.249
27	.238	.260	.285	.403	.126	.336	.003	.003	1.47	.090	.213	.271
28	.243	.245	.324	.429	.137	.224	.005	.000	.199	.122	.286	.267
29	.263	-----	.228	.481	.491	.091	.004	.000	.140	.149	.254	.267
30	.285	-----	.161	.417	.920	.086	.001	.000	.110	.329	.266	.316
31	.302	-----	.321	-----	1.99	-----	.003	.000	-----	.534	-----	.316
MEAN	.264	.245	.245	4.85	.834	.184	.064	.006	.497	.300	.210	.281
INCHES	.048	.040	.044	.853	.151	.032	.012	.001	.087	.054	.037	.051
NOTES: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .005857. TO CONVERT DISCHARGE IN INCHES TO AC-FT, MULTIPLY BY 338.7 MEAN YEARLY DISCHARGE, 0.659 CFS. YIELD, 1.410 INCHES. MAXIMUM AND MINIMUM FLOWS EACH MONTH UNDERLINED.												

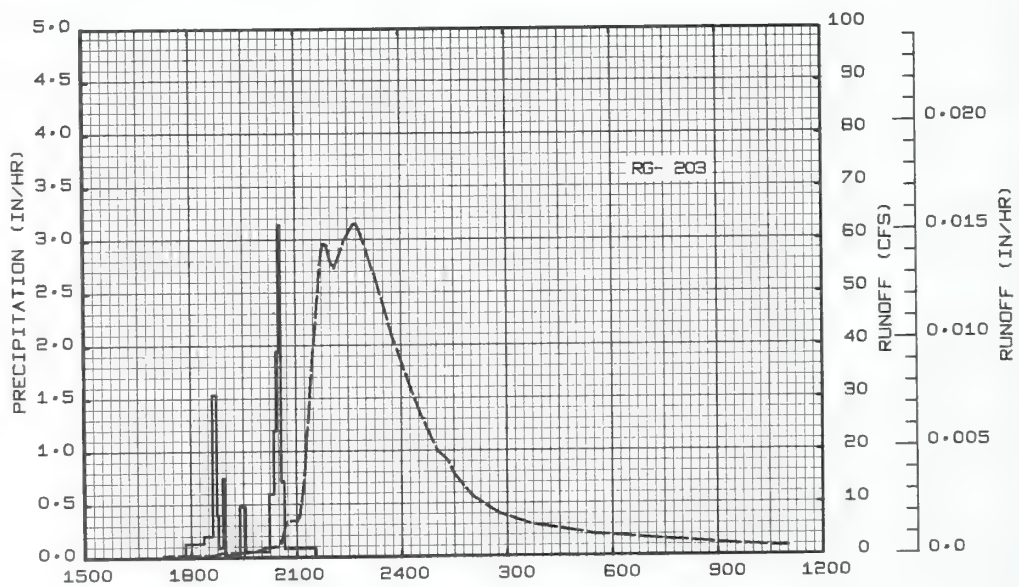
1967			SELECTED RUNOFF EVENTS			CHICKASHA, OKLAHOMA			WATERSHED 5141 NEAR MIDDLEBURG		
ANTECEDENT CONDITIONS			RAINFALL			RUNOFF					
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)	
Watershed conditions: See p. 69.21-1, this publication.			Event of April 12, 1967								
			4-12	RG	203		4-12				
				0209	.00	.00		0225	.37	1/0000	
				0228	.16	.05		0335	22.39	.0009	
				0236	.53	.12		0339	51.17	.0019	
				0245	1.60	.36		0351	253.06	.0050	
				0300	1.08	.63		0355	313.19	.0132	
				0313	1.52	.96		0401	559.25	.0236	
				0324	1.36	1.21		0407	725.91	.0394	
				0328	1.80	1.33		0421	996.35	.0887	
				0332	.90	1.39		0431	1131.02	.1319	
				0336	2.70	1.57		0447	1084.94	.2039	
			0340	.75	1.62	0455	1018.06	.2380			
			0344	1.20	1.70	0511	836.36	.2977			
			0346	.90	1.73	0517	729.46	.3165			
			0449	.14	1.88	0519	605.46	.3219			
			0505	.11	1.91	0525	694.52	.3380			
			0638	.07	2.01	0542	501.15	.3792			
			0710	.19	2.11	0601	354.21	.4121			
			0801	.11	2.20	0635	173.68	.4400			
			0929	.03	2.24	0700	120.75	.4570			
			1003	.05	2.27	0800	73.94	.4876			
			Event of May 5, 1967								
			5- 5	RG	203		5- 5				
				1750	.00	.00		1713	.34	1/0000	
				1822	.13	.07		1839	.40	.0001	
				1837	.20	.12		1849	.74	.0002	
				1844	1.54	.30		1858	.89	.0002	
				1847	.40	.32		1924	.89	.0003	
				1854	.09	.33		1940	.99	.0003	
				1858	.75	.38		1950	1.04	.0004	
				1923	.02	.39		2001	1.48	.0004	
				1933	.48	.47		2017	1.87	.0006	
				2013	.05	.50		2030	2.04	.0007	
				2021	.60	.58	5- 6	2042	6.56	.0009	
				2026	1.20	.68		2058	6.93	.0013	
				2030	1.95	.81		2101	6.93	.0014	
				2034	3.15	1.02		2113	13.99	.0019	
				2039	.72	1.08		2129	38.22	.0036	
				2132	.08	1.15		2145	58.18	.0067	
								2150	59.65	.0079	
								2152	59.65	.0084	
								2157	57.45	.0096	
								2200	56.02	.0103	
								2206	54.60	.0116	
								2214	56.73	.0135	
								2223	59.65	.0156	
								2234	61.90	.0183	
								2242	63.43	.0203	
								2250	61.90	.0224	
								0007	34.95	.0375	
								0033	27.09	.0408	
								0102	20.06	.0436	
								0120	18.24	.0450	
								0129	15.87	.0456	
								0201	11.45	.0474	
								0247	8.11	.0492	
								0341	6.03	.0508	
								0532	4.04	.0531	
								0729	3.05	.0548	
								1000	1.87	.0563	
								1100	1.55	.0567	

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY .000244. FOR 30-DAY ANTECEDENT P AND Q, SEE P. 69.21-3, THIS PUBLICATION. 1/ SOME INTERMEDIATE BREAKPOINTS HAVE BEEN REMOVED TO SHORTEN THE LISTING.

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY .000244. FOR 30-DAY ANTECEDENT P AND Q, SEE P. 69.21-3, THIS PUBLICATION. 1/ SOME INTERMEDIATE BREAKPOINTS HAVE BEEN REMOVED TO SHORTEN THE LISTING.

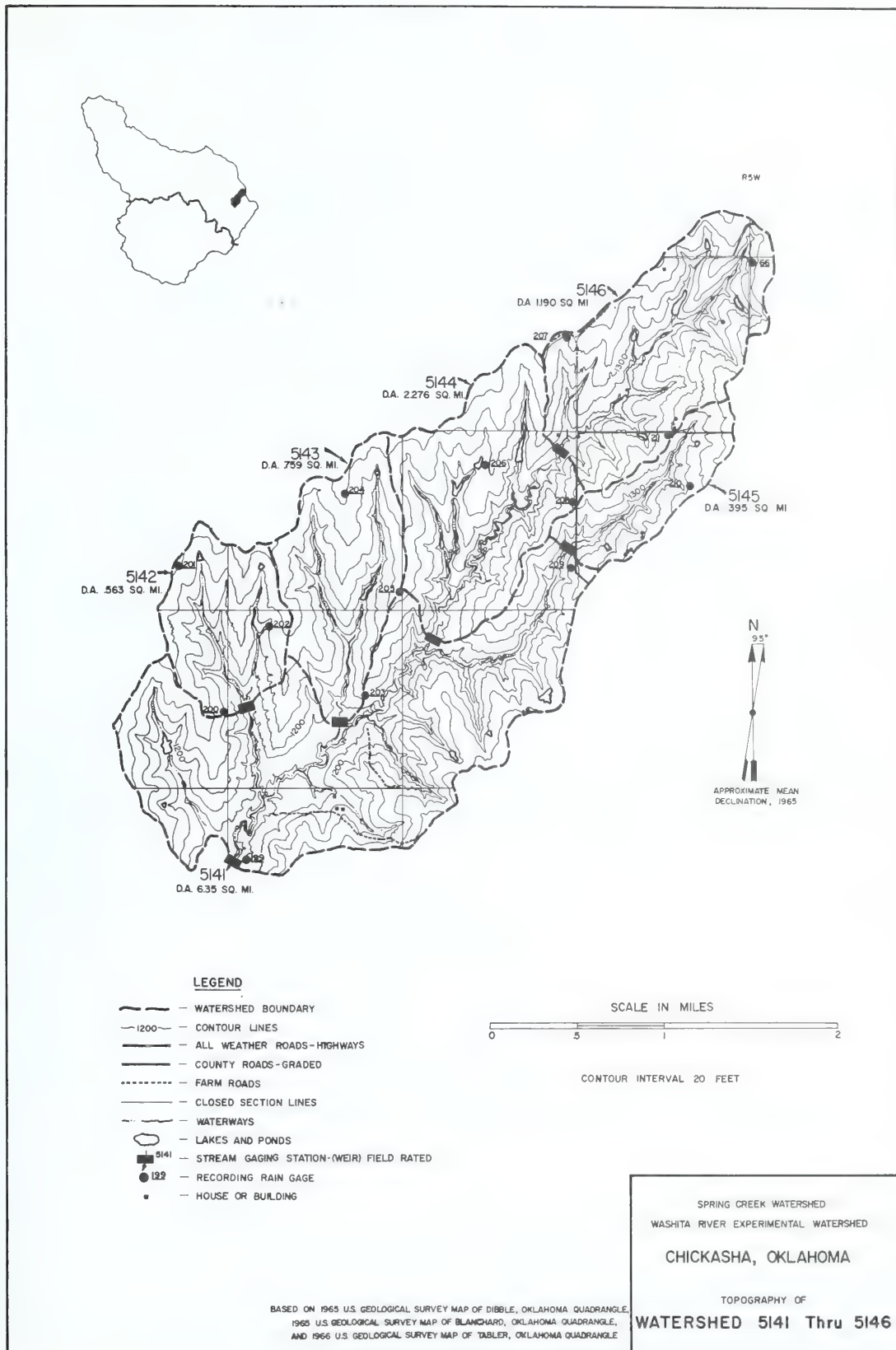


APRIL 12, 1967

CHICKASHA, OKLAHOMA WATERSHED 5141

MAY 5- 6, 1967

CHICKASHA, OKLAHOMA WATERSHED 5141



CHICKASHA, OKLAHOMA WATERSHED 5142 NEAR MIDDLEBURG

LOCATION: WATERSHED — Small watershed near Highway 62 in the vicinity of Middleburg, in Grady County, Okla.; tributary of East Bitter Creek; Washita River; Red River Basin.

GAGING STATION — NW $\frac{1}{4}$ sec. 7, T. 7 N., R. 5 W., lat. 35°05'39", long. 97°46'26", at artificial control.

AREA: 360.3 acres (.563 sq. miles). See composite map, page 69.7-21 of Hydrologic Data for Experimental Agricultural Watersheds in the United States, 1965 publication.

Slope — Percent	0-1	1-3	3-5	5-8	8-12	12 and above	
Percent of area	0	5	60	35	0	0	1/

SOILS: Residual, derived from fine grained sandstone and shale materials. They are deep, fine textured soils on gently rolling to rolling slopes with more shallow soils on the breaks. 1/

Soil	Percent of area	Topsoil		Subsoil		Substratum		Internal drainage
		Avg. depth (in.)	Structure	Permeability	Structure	Permeability	Avg. depth to (in.)	
Nash-Quinlan loam	72	8	Weak fine	Moderate	Granular	Moderate	30	Medium
Grant light silt loam	20	14	Medium fine granular	Moderate	Moderate medium subangular blocky	Moderate	45	Medium
Kingfisher light silt loam	8	13	Moderate medium granular	Moderate	Moderate fine medium subangular blocky	Moderate	34	Moderately slow

Erosion class	1	2	3	4	
Percent of area	0	0	65	35	1/

Class	I	II	III	IV	V	VI	VII	
Percent of area	0	0	22	6	0	72	0	1/

1/ Information presented for general descriptive purposes and not intended to be precise data.

GEOLOGY: The geologic formations and their exposed surface area in percent are entirely Chickasha. The tributary contains only one geologic formation; therefore, the geology is relatively simple. The quality of surface and ground water is relatively good. See description of hydrogeology and general geology map in Hydrologic Data for Experimental Agricultural Watersheds in the United States, 1962, USDA Misc. Pub. 1070, pp. 69.7-8 and 9. Source of data: Oklahoma Geological Survey, Norman, Okla.; Bulletins 73, 87 and Circular 61.

SURFACE DRAINAGE: Good, length of principal waterway 1.15 miles.

CHARACTER OF FLOW: Spring fed intermittent.

INSTRUMENTATION: Precipitation: Three recording weighing type gages with a 12-hour time scale. **Runoff:** The headwater gage consists of two FW-1 water level recorders, one with a 12-hour chart and one with a 192-hour chart, installed on an 18" gage well. Artificial control consists of a "V" notch weir with 2:1 side slopes made of steel sheet piling with a reinforced concrete cap. Low flow measurements are made with a current meter by wading. Measurements are made during periods of extreme low flow by attaching a portable flume to the weir. High flow measurements are made from a bridge just upstream from the weir. Tape downs for the headwater are made from an outside gage reference point on the bridge, and from a reference point inside the gage well. The tailwater gage consists of one FW-1 water level recorder with a 12-hour chart installed on an 18" gage well. Tape down for the tailwater gage is made inside the gage well from a reference point.

WATERSHED CONDITIONS: 100% of the watershed is used for pasture or range. Approximately 25% is severely eroded, but these gullies are healing with tall grasses. There are 4 farm ponds in the watershed. The following table shows the land use.

Percent of watershed in pasture or range - 100	
Classification of range site condition based on production	
Exc. - 3%	Good - 20%
Fair - 55%	Poor - 22%
The general practice for good range utilization is 1 animal unit per 12 acres.	

GENERALLY REPRESENTS: Small tributary watersheds of the Central Great Plains Winter Wheat and Range Region specifically the Central Rolling Red Prairies land resource area (R-80) in Kansas, Oklahoma, and Texas.

MONTHLY PRECIPITATION AND RUNOFF (inches)						CHICKASHA, OKLAHOMA WATERSHED 5142 NEAR MIDDLEBURG AREA — 360.3 ACRES (.563 SQ. MILES)										
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967 P1/ Q	.09 .037	.10 .031	2.02 .032	6.56 .765	4.46 .185	2.09 .066	1.39 .038	1.30 .014	5.24 .116	2.60 .085	.29 .030	1.10 .024	27.24 1.429			
STA AVG P2/ Q																
MEAN P3/ 67 YR	1.16	1.22	1.99	3.35	4.99	3.78	2.52	2.69	3.31	2.88	1.74	1.39	31.02			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	4-12	.4669	4-12	.3317	4-12	.4077	4-12	.442	4-12	.449	4-12	.454	4-10	.561	4-9	.687
MAXIMUMS FOR PERIOD OF RECORD																
1967 TO 19--	4-12 1967	.4669	4-12 1967	.3317	4-12 1967	.4077	4-12 1967	.442	4-12 1967	.449	4-12 1967	.454	4-10 1967	.561	4-9 1967	.687
Notes: Watershed conditions same as that described on previous page under WATERSHED CONDITIONS. For watershed map, see p. 69.21-6. For composite map see 1965 edition of Hydrologic Data for Experimental Agricultural Watersheds in the United States, p. 69.7-21. 1/ Precipitation data obtained from a Thiessen weighted average of 3 gages on the watershed. 2/ Precipitation records began Jan. 1967; runoff records began Jan. 1967. 3/ Mean P based on 67-yr (1901-67) U.S. Weather Bureau period of record at Chickasha, Okla.; missing months estimated.																
MISCELLANEOUS DATA																
RUNOFF PEAK DATA: YEAR (1967): Maximum — Apr. 12, 169.7 cfs (4.88 ft). Minimum — No flow - periodically. PERIOD OF RECORD: Maximum — Apr. 12, 1967, 169.7 cfs (4.88 ft). Minimum — No flow. PEAK DISCHARGES: (Above base flow of 50 cfs) 1967 — Apr. 10, 59.6 cfs (3.57 ft); Apr. 12, 169.7 cfs (4.88 ft).																
DAILY TEMPERATURE: See p. 69.7-3																

1967 DAILY PRECIPITATION (inches)						CHICKASHA, OKLAHOMA WATERSHED 5142 NEAR MIDDLEBURG						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.00	.09	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.67	.00	.18	.00
3	.00	.00	.00	.00	.00	.00	.15	.00	1.21	.00	.02	.00
4	.00	.00	.00	.00	.00	.00	.00	.71	.37	.00	.00	.00
5	.00	.00	.00	.00	1.09	.00	.28	.00	.62	.00	.00	.00
6	.00	.00	.05	.00	.01	.00	.00	.00	.05	.00	.00	.00
7	.00	.00	.00	.42	.00	.00	.00	.00	.00	.96	.00	.00
8	.00	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	1.08	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	1.02	.00	.00	.00	.00	.00	.00	.00	.05
11	.00	.00	.00	.00	.00	.00	.00	.02	.00	.00	.00	.00
12	.00	.00	.00	2.51	.00	.09	.00	.00	.00	.00	.00	.00
13	.00	.00	.03	.57	.04	.00	.00	.00	.06	.00	.00	.03
14	.00	.00	.00	.00	.02	.00	.00	.00	.44	.00	.00	.12
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.63	.00	.07
16	.00	.00	.00	.00	.00	.00	.25	.00	.08	.00	.00	.62
17	.00	.00	.00	.00	.00	.00	.00	.31	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.58	.00	.00	.00	.00	.00
19	.00	.00	.22	.27	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.69	1.42	.00	.00	.00	.51	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.14	.00	.00	.02
22	.00	.00	.71	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.26	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.35	.00	.00	.95	.00	.00	.00	.00	.00	.00
26	.09	.00	.10	.00	.00	.79	.00	.00	1.09	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.13	.00	.00	.00	.02	.00
29	.00	-----	.00	.00	.70	.00	.00	.00	.00	.01	.07	.00
30	.00	-----	.16	.00	.96	.00	.00	.00	.00	.69	.00	.19
31	.00	-----	.40	-----	.22	-----	.00	.26	-----	.31	-----	.00
TOTAL	.09	.10	2.02	6.56	4.46	2.09	1.39	1.30	5.24	2.60	.29	1.10
STA AV												
NOTES: YEARLY PRECIPITATION 27.24 INCHES. PRECIPITATION VALUES ARE A THIESSEN WEIGHTED AVERAGE OF 3 GAGES ON THE WATERSHED. FIRST YEAR OF RECORD THEREFORE NO STA AV SHOWN.												
1967 MEAN DAILY DISCHARGE (cfs)						CHICKASHA, OKLAHOMA WATERSHED 5142 NEAR MIDDLEBURG						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.023	.020	.019	.013	.046	.036	.020	.005	.005	.015	.013	.012
2	.020	.019	.020	.012	.046	.033	.022	.005	.024	.024	.015	.011
3	.019	.019	.020	.011	.047	.032	.036	.004	.460	.035	.021	.011
4	.018	.019	.021	.011	.047	.030	.036	.019	.029	.041	.019	.012
5	.018	.019	.022	.011	.843	.030	.040	.011	.374	.047	.021	.011
6	.017	.018	.019	.011	.060	.027	.016	.010	.021	.052	.021	.010
7	.017	.019	.016	.017	.046	.027	.017	.003	.019	.396	.022	.010
8	.017	.019	.015	.014	.043	.025	.017	.004	.030	.025	.019	.010
9	.017	.019	.017	.745	.039	.023	.019	.005	.014	.017	.014	.011
10	.021	.019	.015	2.12	.040	.024	.014	.009	.013	.024	.016	.011
11	.021	.019	.015	.027	.036	.025	.013	.010	.015	.038	.018	.011
12	.020	.019	.015	6.82	.037	.029	.018	.011	.015	.026	.018	.011
13	.020	.019	.015	.589	.040	.025	.021	.011	.022	.019	.019	.010
14	.020	.018	.013	.027	.038	.021	.019	.009	.027	.020	.016	.012
15	.019	.015	.012	.027	.036	.019	.030	.004	.015	.052	.015	.012
16	.018	.013	.012	.031	.031	.020	.024	.003	.038	.101	.012	.019
17	.016	.014	.012	.044	.028	.019	.014	.010	.009	.015	.012	.024
18	.015	.015	.012	.072	.027	.022	.030	.004	.008	.015	.012	.013
19	.016	.015	.015	.068	.026	.019	.016	.004	.012	.016	.012	.011
20	.017	.014	.016	.054	.590	.016	.014	.006	.013	.020	.013	.011
21	.018	.014	.012	.433	.037	.014	.014	.008	.046	.019	.014	.011
22	.018	.014	.033	.044	.035	.013	.013	.005	.016	.020	.013	.010
23	.017	.013	.014	.042	.031	.022	.014	.004	.019	.022	.014	.010
24	.017	.013	.012	.044	.030	.023	.012	.006	.017	.026	.013	.011
25	.017	.013	.015	.047	.028	.083	.011	.007	.016	.028	.013	.011
26	.017	.016	.015	.044	.028	.250	.011	.008	.425	.029	.013	.011
27	.017	.017	.011	.046	.029	.025	.010	.009	.015	.029	.013	.011
28	.017	.018	.011	.054	.028	.022	.011	.006	.012	.026	.013	.011
29	.018	-----	.011	.057	.071	.020	.012	.001	.013	.024	.013	.011
30	.018	-----	.011	.049	.261	.021	.013	.001	.012	.046	.012	.011
31	.020	-----	.019	-----	.084	-----	.011	.006	-----	.025	-----	.011
MEAN	.018	.017	.016	.386	.091	.033	.018	.007	.058	.042	.015	.012
INCHES	.037	.031	.032	.765	.185	.066	.038	.014	.116	.085	.030	.024
NOTES: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .06606. TO CONVERT DISCHARGE IN INCHES TO AC-FT, MULTIPLY BY 30.02 MEAN YEARLY DISCHARGE, 0.059 CFS. YIELD, 1.423 INCHES. MAXIMUM AND MINIMUM FLOWS EACH MONTH UNDERLINED.												

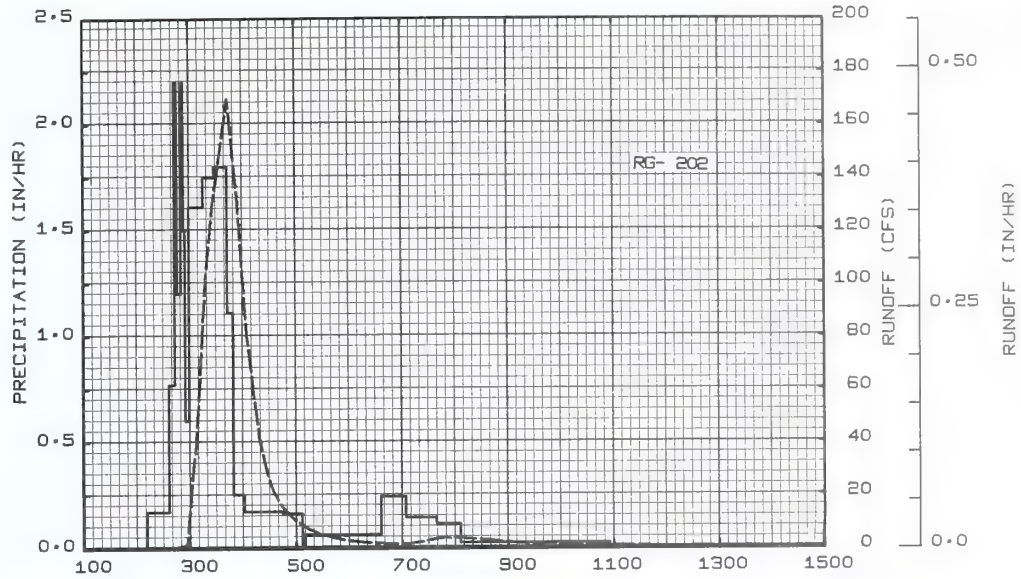
1967 SELECTED RUNOFF EVENTS			CHICKASHA, OKLAHOMA				WATERSHED 5142 NEAR MIDDLEBURG			
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)
Watershed conditions: See p. 69.22-1, this publication.			<u>Event of April 12, 1967</u>							
			RG	202						
			4-12	0212	.00	.00	4-12	0220	.02	1/.0000
				0237	.17	.07		0241	.06	.0000
				0244	.77	.16		0253	.55	.0002
				0247	2.20	.27		0256	.93	.0003
				0251	1.20	.35		0257	1.41	.0005
				0254	2.20	.46		0258	3.00	.0004
				0256	1.50	.51		0301	15.29	.0017
				0300	.60	.55		0311	55.58	.0174
				0316	1.61	.98		0319	103.93	.0468
				0329	1.75	1.36		0327	130.24	.0898
				0343	1.80	1.78		0336	150.56	.1477
				0350	1.11	1.91		0344	169.68	.2065
				0402	.25	1.96		0355	130.52	.2822
				0445	.17	2.08		0400	103.85	.3091
				0507	.16	2.14		0405	80.40	.3302
				0510	.00	2.14		0420	40.36	.3714
				0636	.06	2.22		0428	27.79	.3839
				0704	.24	2.33		0435	21.13	.3918
				0739	.14	2.41		0445	15.21	.4001
				0806	.11	2.46		0458	10.56	.4078
				0948	.02	2.49		0506	8.70	.4113
				1055	.02	2.51		0515	6.60	.4145
								0536	4.12	.4198
								0559	2.44	.4233
								0630	1.43	.4260
								0700	1.15	.4278
								0725	2.16	.4295
								0736	3.05	.4300
								0743	3.43	.4319
								0754	3.07	.4337
								0830	2.80	.4391
								0900	1.81	.4423
								1000	.76	.4455
								1130	.31	.4476
								1400	.10	.4489

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY .002752. FOR 30-DAY ANTECEDENT P AND Q, SEE P. 69.22-3. FOR ISOHYETAL MAP, SEE P. 69.7-7, THIS PUBLICATION. 1/ SOME INTERMEDIATE BREAKPOINTS HAVE BEEN REMOVED TO SHORTEN THE LISTING.

1967			SELECTED RUNOFF EVENTS				CHICKASHA, OKLAHOMA				WATERSHED 5142 NEAR MIDDLEBURG			
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF							
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)				
			Event of May 5, 1967											
			5- 5	RG	202		5- 5	1700	.05	1/.0000				
				1640	.00	.00		1841	.07	.0003				
				1720	.17	.11		1911	.33	.0006				
				1819	.04	.15		1921	.30	.0008				
				1825	.10	.16		1929	.34	.0009				
				1830	1.68	.30		1940	.42	.0011				
				1834	.75	.35		2032	.39	.0020				
				1841	.17	.37		2034	.50	.0020				
				1846	.60	.42		2037	1.99	.0022				
				1852	.10	.43		2039	4.22	.0025				
				1910	.03	.44		2041	5.02	.0029				
				1914	.30	.46		2042	5.95	.0031				
				1918	.75	.51		2044	7.46	.0037				
				1928	.18	.54		2045	9.13	.0041				
				2010	.06	.58		2046	12.24	.0046				
				2012	1.20	.62		2047	15.26	.0052				
				2017	4.44	.99		2048	18.79	.0060				
				2020	1.60	1.07		2051	32.50	.0097				
				2025	.60	1.12		2053	35.05	.0128				
				2030	.24	1.14		2055	35.95	.0161				
				2055	.02	1.15		2057	35.39	.0194				
				2112	.04	1.16		2058	33.78	.0210				
								2100	31.90	.0240				
								2102	28.76	.0268				
								2106	22.66	.0315				
								2108	20.00	.0335				
								2113	15.47	.0376				
								2115	13.82	.0389				
								2121	9.58	.0422				
								2127	7.00	.0445				
								2131	5.85	.0457				
								2133	5.19	.0462				
								2137	4.47	.0470				
								2142	3.61	.0480				
								2148	2.91	.0489				
								2153	2.40	.0495				
								2159	1.89	.0501				
								2214	1.21	.0511				
								2234	.65	.0520				
								2242	.55	.0522				
Watershed conditions: See p. 69.22-1, this publication.														

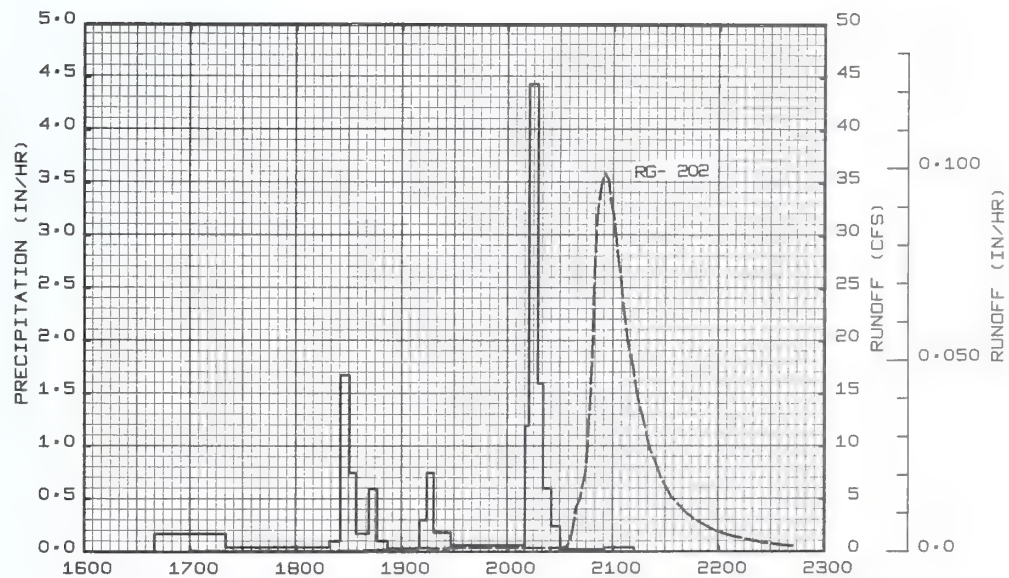
NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR. MULTIPLY BY .002752. FOR 30-DAY ANTECEDENT P AND Q, SEE P. 69.22-3, THIS PUBLICATION. 1/ SOME INTERMEDIATE BREAKPOINTS HAVE BEEN REMOVED TO SHORTEN THE LISTING.

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR. MULTIPLY BY .002752. FOR 30-DAY ANTECEDENT P AND Q, SEE P. 69.22-3, THIS PUBLICATION. 1/ SOME INTERMEDIATE BREAKPOINTS HAVE BEEN REMOVED TO SHORTEN THE LISTING.



APRIL 12, 1967

CHICKASHA, OKLAHOMA WATERSHED 5142



MAY 5, 1967

CHICKASHA, OKLAHOMA WATERSHED 5142

CHICKASHA, OKLAHOMA WATERSHED 5143 NEAR MIDDLEBURG

LOCATION: WATERSHED — Small watershed near Highway 62 in the vicinity of Middleburg, in Grady County, Okla.; tributary of East Bitter Creek; Washita River; Red River Basin.

GAGING STATION — NE $\frac{1}{4}$ sec. 7, T. 7 N., R. 5 W., lat. '35°05'36", long. 97°45'52", at artificial control.

AREA: 485.8 acres (.759 sq. miles). See composite map, page 69.7-21 of Hydrologic Data for Experimental Agricultural Watersheds in the United States, 1965 publication.

SLOPES:	Slope — Percent	0-1	1-3	3-5	5-8	8-12	12 and above	
	Percent of area	0	4	58	38	0	0	1/

SOILS: Residual, derived from fine grained sandstone and shale materials. They are deep, fine textured soils on gently rolling to rolling slopes with more shallow soils on the breaks. 1/

Soil	Percent of area	Topsoil			Subsoil		Substratum		Internal drainage
		Avg. depth (in.)	Structure	Permeability	Structure	Permeability	Avg. depth to (in.)	Permeability	
Nash-Quinlan loam	38	8	Weak fine	Moderate	Granular	Moderate	30	Moderate	Medium
Chickasha-Kingfisher very fine sandy loam	32	13	Moderate medium granular	Moderate	Moderate fine medium subangular blocky	Moderate	34	Moderate moderately slow	Slow
Renfrow silt loam	20	14	Moderate fine granular	Moderate	Moderate fine blocky	Moderately slow	50	Moderately slow	Slow
Port silt loam	10	20	Moderate fine	Moderate	Moderate medium granular	Moderate	45	Moderate	Medium

EROSION:	Erosion class	1	2	3	4	
	Percent of area	5	35	56	4	1/

LAND CAPABILITY:	Class	I	II	III	IV	V	VI	VII	
	Percent of area	5	0	55	0	0	36	4	1/

1/ Information presented for general descriptive purposes and not intended to be precise data.

GEOLOGY: The geologic formations and their exposed surface area in percent are: Alluvium, 8.0; Cloud Chief, 0.0; Rush Springs, 0.0; Dog Creek, Blaine and Marlow, 0.0; and Chickasha, 92.0. The tributary contains only two geologic formations; therefore, the geology is relatively simple. The quality of surface and ground water is relatively good. See description of hydrogeology and general geology map in Hydrologic Data for Experimental Agricultural Watersheds in the United States, 1962, USDA Misc. Pub. 1070, pp. 69.7-8 and 9. Source of data: Oklahoma Geological Survey, Norman, Okla.; Bulletins 73, 87 and Circular 61.

SURFACE DRAINAGE: Good; length of principal waterway 1.5 miles.

CHARACTER OF FLOW: Spring fed intermittent.

INSTRUMENTATION: **Precipitation:** Four recording weighing type gages with a 12-hour time scale. **Runoff:** The headwater gage consists of two FW-1 water level recorders, one with a 12-hour chart and one with a 192-hour chart, installed on an 18" gage well. Artificial control consists of a "V" notch weir with 3:1 side slopes of reinforced concrete. Low flow measurements are made with a current meter by wading. Measurements are made during periods of extreme low flow by attaching a portable flume to the weir. High flow measurements are made from a bridge just upstream from the weir. Tape downs for the headwater are made from an outside gage reference point on the bridge and from a reference point inside the gage well. The tailwater gage consists of one FW-1 water level recorder with a 12-hour chart installed on an 18" gage well. Tape down for the tailwater gage is made inside the gage well from a reference point.

WATERSHED CONDITIONS: 100% of the watershed is used for pasture. There is a good mixture of tall, intermediate, and short grasses. There is one farm pond in this watershed. The following table shows the land use:

Percent of watershed in pasture or range - 100	
Classification of range site condition based on production	
Exc. - 5%	Good - 25%
Fair - 50%	Poor - 20%
The general practice for good range utilization is 1 animal unit per 12 acres.	

GENERALLY REPRESENTS: Small tributary watersheds of the Central Great Plains Winter Wheat and Range Region specifically the Central Rolling Red Prairies land resource area (H-80) in Kansas, Oklahoma, and Texas.

MONTHLY PRECIPITATION AND RUNOFF (inches)						CHICKASHA, OKLAHOMA WATERSHED 5143 NEAR MIDDLEBURG AREA — 485.8 ACRES (.759 SQ. MILES)								
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL	
1967 P 1/ O	.08 .013	.10 .005	1.96 .007	6.29 .500	4.25 .074	2.03 .008	1.34 .000	1.29 .000	5.13 .008	2.74 .003	.30 .000	1.10 .002	26.61 .620	
STA AVG P 2/ O														
MEAN P 3/ 67 YR	1.16	1.22	1.99	3.35	4.99	3.78	2.52	2.69	3.31	2.88	1.74	1.39	31.02	

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	4-12	.2996	4-12	.2067	4-12	.2560	4-12	.289	4-12	.308	4-12	.330	4-12	.384	4-9	.457

MAXIMUMS FOR PERIOD OF RECORD																
19 67 TO	4-12		4-12		4-12		4-12		4-12		4-12		4-12			
19 --	1967	.2996	1967	.2067	1967	.2560	1967	.289	1967	.308	1967	.330	1967	.384	1967	.457

Notes: Watershed conditions same as that described on previous page under WATERSHED CONDITIONS. For watershed map, see p. 69, 21-6. For composite map see 1965 edition of Hydrologic Data for Experimental Agricultural Watersheds in the United States, p. 69.7-21. 1/ Precipitation data obtained from a Thiessen weighted average of 4 gages on the watershed. 2/ Precipitation records began Jan. 1967; runoff records began Jan. 1967. 3/ Mean P based on 67-yr (1901-67) U.S. Weather Bureau period of record at Chickasha, Okla.; missing months estimated.

MISCELLANEOUS DATA	
RUNOFF PEAK DATA:	YEAR (1967): Maximum — Apr. 12, 146.7 cfs (3.98 ft). Minimum — No flow - periodically.
	PERIOD OF RECORD: Maximum — Apr. 12, 1967, 146.7 cfs (3.98 ft). Minimum — No flow.
	PEAK DISCHARGES: (Above base flow of 50 cfs) 1967 — Apr. 12, 146.7 cfs (3.98 ft).
DAILY TEMPERATURE:	See p. 69.7-3.

1967 DAILY PRECIPITATION (inches)						CHICKASHA, OKLAHOMA WATERSHED 5143 NEAR MIDDLEBURG						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.00	.09	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.63	.00	.17	.00
3	.00	.00	.00	.00	.00	.00	.15	.00	1.08	.00	.03	.00
4	.00	.00	.00	.00	.00	.00	.00	.80	.41	.00	.00	.00
5	.00	.00	.00	.00	1.09	.00	.21	.00	.57	.00	.00	.00
6	.00	.00	.05	.00	.00	.00	.00	.00	.04	.00	.00	.00
7	.00	.00	.00	.42	.00	.00	.00	.00	.00	1.06	.00	.00
8	.00	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	1.06	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.93	.00	.00	.00	.00	.00	.00	.00	.05
11	.00	.00	.00	.00	.00	.00	.00	.02	.00	.00	.00	.00
12	.00	.00	.00	2.45	.00	.08	.00	.00	.00	.00	.00	.00
13	.00	.00	.03	.51	.04	.00	.00	.00	.06	.00	.00	.03
14	.00	.00	.00	.00	.02	.00	.00	.00	.47	.00	.00	.12
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.71	.00	.06
16	.00	.00	.00	.00	.00	.00	.26	.00	.07	.00	.00	.62
17	.00	.00	.00	.00	.00	.00	.00	.24	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.04	.51	.00	.00	.00	.00	.00
19	.00	.00	.20	.28	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.64	1.32	.00	.00	.00	.56	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.03	.00	.13	.00	.00	.02
22	.00	.00	.77	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.21	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.32	.00	.00	.99	.00	.00	.00	.00	.00	.00
26	.08	.00	.09	.00	.00	.71	.00	.00	1.11	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.18	.00	.00	.00	.02	.00
29	.00	-----	.00	.00	.65	.00	.00	.00	.00	.02	.08	.00
30	.00	-----	.12	.00	.91	.00	.00	.00	.00	.65	.00	.20
31	.00	-----	.38	-----	.22	-----	.00	.23	-----	.30	-----	.00
TOTAL	.08	.10	1.96	6.29	4.25	2.03	1.34	1.29	5.13	2.74	.30	1.10
STA AV												

NOTES:

YEARLY PRECIPITATION 26.61 INCHES. PRECIPITATION VALUES ARE A THIESSEN WEIGHTED AVERAGE OF 4 GAGES ON THE WATERSHED. FIRST YEAR OF RECORD THEREFORE NO STA AV SHOWN.

1967 MEAN DAILY DISCHARGE (cfs)						CHICKASHA, OKLAHOMA WATERSHED 5143 NEAR MIDDLEBURG						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.021	.008	.001	.004	.013	.017	.000	.000	.000	.000	.000	.000
2	.019	.007	.001	.001	.012	.014	.000	.000	.000	.000	.000	.000
3	.017	.005	.001	.000	.013	.012	.000	.000	.000	.000	.000	.000
4	.016	.005	.002	.000	.014	.009	.000	.000	.000	.000	.000	.000
5	.014	.007	.002	.000	.472	.006	.000	.000	.050	.000	.000	.000
6	.011	.005	.004	.000	.076	.002	.000	.000	.000	.000	.000	.000
7	.009	.005	.003	.005	.034	.000	.000	.000	.000	.062	.000	.000
8	.009	.005	.003	.003	.020	.000	.000	.000	.000	.000	.000	.000
9	.009	.005	.004	.266	.018	.000	.000	.000	.000	.000	.000	.000
10	.009	.005	.002	.790	.024	.000	.000	.000	.000	.000	.000	.000
11	.009	.004	.000	.021	.025	.000	.000	.000	.000	.000	.000	.000
12	.009	.002	.000	6.63	.025	.000	.000	.000	.000	.000	.000	.000
13	.008	.003	.001	1.16	.043	.000	.000	.000	.000	.000	.000	.000
14	.008	.003	.000	.315	.055	.000	.000	.000	.000	.000	.000	.000
15	.008	.003	.000	.091	.039	.000	.000	.000	.000	.006	.000	.000
16	.008	.001	.000	.049	.019	.000	.000	.000	.000	.000	.000	.004
17	.007	.005	.000	.027	.007	.000	.000	.000	.000	.000	.000	.027
18	.005	.005	.000	.025	.004	.000	.000	.000	.000	.000	.000	.007
19	.005	.005	.000	.050	.000	.000	.000	.000	.000	.000	.000	.002
20	.005	.002	.007	.394	.266	.000	.000	.000	.000	.000	.000	.004
21	.005	.001	.002	.145	.030	.000	.000	.000	.000	.000	.000	.006
22	.005	.003	.050	.069	.016	.000	.000	.000	.000	.000	.000	.000
23	.005	.002	.013	.028	.010	.000	.000	.000	.000	.000	.000	.000
24	.005	.002	.003	.017	.006	.000	.000	.000	.000	.000	.000	.000
25	.004	.001	.013	.023	.004	.000	.000	.000	.000	.000	.000	.000
26	.008	.003	.009	.017	.001	.097	.000	.000	.109	.000	.000	.000
27	.004	.004	.003	.017	.001	.001	.000	.000	.008	.000	.000	.000
28	.005	.001	.001	.020	.003	.000	.000	.000	.000	.000	.000	.000
29	.006	-----	.000	.026	.048	.000	.000	.000	.000	.000	.000	.000
30	.006	-----	.000	.020	.124	.000	.000	.000	.000	.000	.000	.000
31	.007	-----	.011	-----	.095	-----	.000	.000	-----	.000	-----	.000
MEAN	.009	.004	.004	.340	.049	.005	.000	.000	.006	.002	.000	.002
INCHES	.013	.005	.007	.500	.074	.008	.000	.000	.008	.003	.000	.002

NOTES: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .04899. TO CONVERT DISCHARGE IN INCHES TO AC-FT, MULTIPLY BY 40.08 MEAN YEARLY DISCHARGE, 0.035 CFS. YIELD, 0.620 INCHES. MAXIMUM AND MINIMUM FLOWS EACH MONTH UNDERLINED.

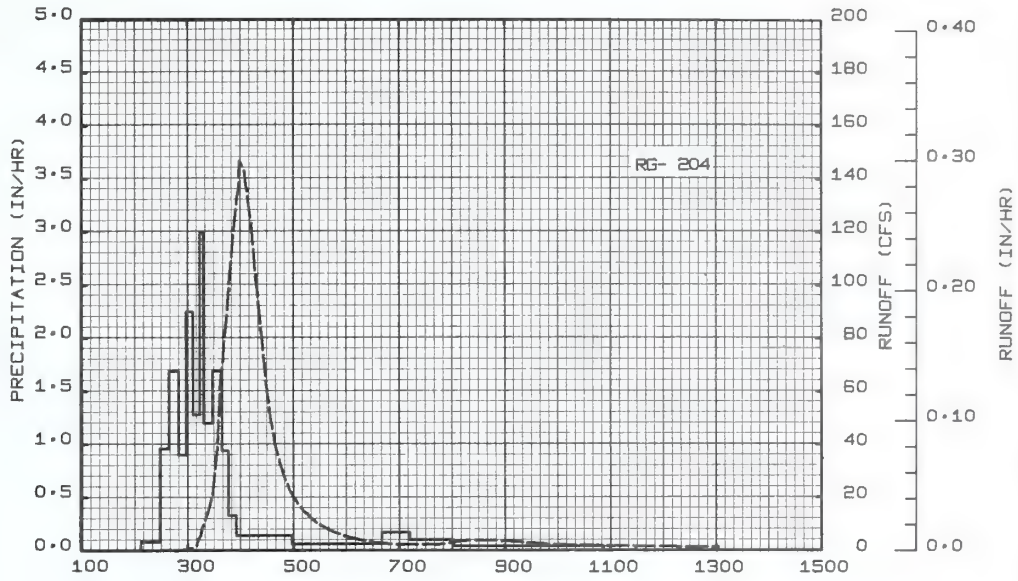
1967			SELECTED RUNOFF EVENTS				CHICKASHA, OKLAHOMA				WATERSHED 5143 NEAR MIDDLEBURG			
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF							
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)				
Event of April 12, 1967														
			4-12	RG	204		4-12	0213	.01	.140000				
				0207	.00	.00		0300	.25	.0001				
				0229	.08	.03		0305	.70	.0002				
				0239	.96	.19		0310	2.01	.0004				
				0250	1.69	.50		0319	10.73	.0022				
				0258	.90	.62								
Watershed conditions: See p. 69.23-1, this publication.														
				0306	2.25	.92		0329	22.56	.0076				
				0314	1.28	1.09		0330	26.77	.0085				
				0318	3.00	1.29		0335	49.84	.0147				
				0328	1.20	1.49		0338	65.17	.0207				
				0339	1.69	1.80		0340	71.65	.0254				
				0346	.94	1.91		0345	90.06	.0394				
				0355	.33	1.96		0350	111.59	.0567				
				0458	.14	2.11		0358	137.99	.0912				
				0640	.06	2.21		0359	146.73	.0960				
				0712	.17	2.30		0404	143.47	.1207				
				0802	.10	2.38		0409	130.48	.1440				
				1052	.04	2.49		0412	123.12	.1569				
								0421	90.16	.1893				
								0425	76.79	.2007				
								0431	57.48	.2143				
								0440	38.38	.2287				
								0449	28.17	.2389				
								0500	20.28	.2478				
								0511	15.15	.2544				
								0518	12.83	.2578				
								0529	9.84	.2620				
								0540	7.94	.2653				
								0554	5.95	.2686				
								0603	4.98	.2702				
								0613	4.12	.2718				
								0620	3.61	.2727				
								0652	2.34	.2758				
								0712	2.15	.2773				
								0743	2.19	.2796				
								0751	2.49	.2802				
								0802	2.99	.2812				
								0813	3.56	.2825				
								0822	3.77	.2836				
								0832	3.85	.2849				
								0851	3.73	.2874				
								0902	3.54	.2887				
								0918	3.10	.2905				
								0940	2.52	.2926				
								0955	2.19	.2938				
								1106	1.60	.2984				
								1303	1.19	.3038				

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY .002041. FOR 30-DAY ANTECEDENT P AND Q, SEE P. 69.23-3. FOR ISOHYETAL MAP, SEE P. 69.7-7, THIS PUBLICATION. 1/ SOME INTERMEDIATE BREAKPOINTS HAVE BEEN REMOVED TO SHORTEN THE LISTING.

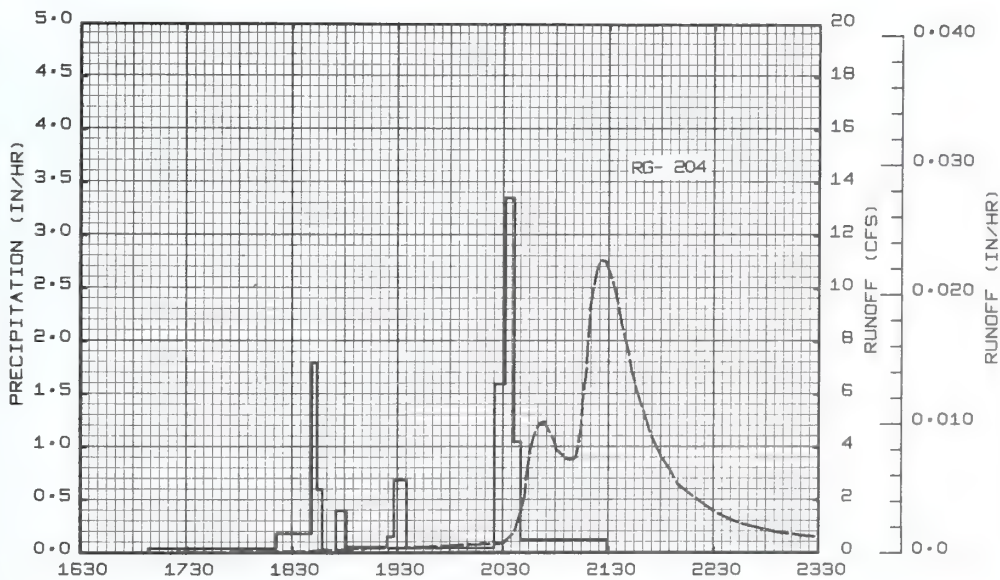
NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY .002041. FOR 30-DAY ANTECEDENT P AND Q, SEE P. 69.23-3. FOR ISOHYETAL MAP, SEE P. 69.7-7, THIS PUBLICATION. 1/ SOME INTERMEDIATE BREAKPOINTS HAVE BEEN REMOVED TO SHORTEN THE LISTING.

1967 SELECTED RUNOFF EVENTS			CHICKASHA, OKLAHOMA				WATERSHED 5143 NEAR MIDDLEBURG				
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)	
			Event of May 5, 1967								
			5- 5	RG	204		5- 5				
				1708	.00	.00		1722	.02	1/.0000	
				1821	.04	.05		1843	.05	.0001	
				1841	.18	.11		2013	.30	.0006	
				1844	1.80	.20		2030	.34	.0008	
				1847	.60	.23		2036	.71	.0009	
				1855	.00	.23		2040	1.56	.0011	
				1901	.40	.27		2043	2.82	.0013	
				1924	.05	.29		2045	3.85	.0015	
				1928	.15	.30		2047	4.41	.0018	
				1935	.69	.38		2049	4.71	.0021	
				2025	.04	.41		2050	4.84	.0023	
				2031	1.60	.57		2051	4.92	.0024	
				2036	3.36	.85		2053	4.95	.0028	
				2040	1.05	.92		2055	4.74	.0031	
				2045	.12	.93		2059	4.19	.0037	
				2129	.12	1.02		2100	3.92	.0039	
								2102	3.80	.0041	
								2105	3.59	.0045	
								2107	3.54	.0047	
								2110	3.56	.0051	
								2111	3.64	.0052	
								2112	3.98	.0054	
								2114	4.77	.0057	
								2115	5.95	.0058	
								2117	7.00	.0063	
								2118	8.19	.0065	
								2119	9.21	.0068	
								2121	10.06	.0075	
								2123	10.78	.0082	
								2125	11.08	.0089	
								2128	11.03	.0101	
								2131	10.50	.0112	
								2135	9.42	.0125	
								2137	8.67	.0131	
								2141	7.58	.0142	
								2149	5.48	.0160	
								2153	4.60	.0167	
								2200	3.63	.0177	
								2205	3.12	.0182	
								2209	2.62	.0186	
								2219	2.08	.0194	
						2230	1.57	.0201			
						2239	1.25	.0205			
						2246	1.06	.0209			
						2307	.76	.0215			
						2315	.71	.0217			
						2321	.64	.0218			
						2328	.59	.0220			
Watershed conditions: See p. 69.23-1, this publication.											

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY .002041. FOR 30-DAY ANTECEDENT P AND Q, SEE P. 69.23-3, THIS PUBLICATION. 1/ SOME INTERMEDIATE BREAKPOINTS HAVE BEEN REMOVED TO SHORTEN THE LISTING.



APRIL 12, 1967

CHICKASHA, OKLAHOMA WATERSHED 5143

MAY 5, 1967

CHICKASHA, OKLAHOMA WATERSHED 5143

CHICKASHA, OKLAHOMA WATERSHED 5144 NEAR MIDDLEBURG

LOCATION: WATERSHED — Small watershed near Highway 62 in the vicinity of Middleburg, in Grady County, Okla.; tributary of East Bitter Creek; Washita River; Red River Basin.

GAGING STATION — Center of sec. 5, T. 7 N., R. 5 W., lat. 35°05'58", long. 97°45'19", at artificial control.

AREA: 1,456 acres (2.28 sq. miles). See composite map, page 69.7-21 of Hydrologic Data for Experimental Agricultural Watersheds in the United States, 1963 publication.

SLOPES:	Slope — Percent	0-1	1-3	3-5	5-8	8-12	12 and above	
	Percent of area	0	6	63	25	6	0	1/

SOILS: Residual, derived from fine grained sandstone and shale materials. They are deep, fine textured soils on gently rolling to rolling slopes with more shallow soils on the breaks. 1/

Soil	Per- cent of area	Topsoil			Subsoil		Substratum		Internal drainage
		Avg. depth (in.)	Structure	Permea- bility	Structure	Permea- bility	Avg. depth to (in.)	Permea- bility	
Nash-Quinlan loam	50	6	Weak fine	Moderate	Granular	Moderate	30	Moderate	Medium
Zaneis Kingfisher silt loam	36	16	Moderate medium granular	Moderate	Moderate fine subangular blocky	Moderate	43	Moderately slow	Slow
Renfrow silt loam	8	14	Moderate fine granular	Moderate	Moderate fine blocky	Moderately slow	50	Moderately slow	Slow
Stony Outcrop loam	6	10	Moderate weak fine granular	Moderate	Weak fine granular	Moderate	36	Moderately slow	Medium

EROSION:	Erosion class	1	2	3	4	
	Percent of area	0	10	70	20	1/

LAND CAPABILITY:	Class	I	II	III	IV	V	VI	VII	
	Percent of area	0	0	50	10	1	30	9	1/

1/ Information presented for general descriptive purposes and not intended to be precise data.

GEOLOGY: The geologic formations and their exposed surface area in percent are entirely Chickasha. The tributary contains only one geologic formation; therefore, the geology is relatively simple. The quality of surface and ground water is relatively good. See description of hydrogeology and general geology map in Hydrologic Data for Experimental Agricultural Watersheds in the United States, 1962, USDA Misc. Pub. 1070, pp. 69.7-8 and 9. Source of data: Oklahoma Geological Survey, Norman, Okla.; Bulletins 73, 87 and Circular 61.

SURFACE DRAINAGE: Good; length of principal waterway 3.6 miles.

CHARACTER OF FLOW: Perennial.

INSTRUMENTATION: **Precipitation:** Nine recording weighing type gages, of which 8 have a 12-hour time scale and 1 has a 24-hour time scale. **Runoff:** The headwater gage consists of two FW-1 water level recorders, one with a 12-hour chart and one with a 192-hour chart, installed on an 18" gage well. Artificial control consists of a "V" notch weir with 2:1 side slopes made of steel sheet piling with a reinforced concrete cap. Low flow measurements are made with a current meter by wading. Measurements are made during periods of extreme low flow by attaching a portable flume to the weir. High flow measurements are made from a bridge just upstream from the weir. Tape downs for the headwater are made from an outside gage reference point on the bridge and from a reference point inside the gage well. The tailwater gage consists of one FW-1 water level recorder with a 12-hour chart installed on an 18" gage well. Tape down for the tailwater gage is made inside the gage well from a reference point.

WATERSHED CONDITIONS: 100% of the watershed is used for pasture. At one time about 10% of the watershed was cultivated along the creek bottoms. There are 12 farm ponds in this watershed. The following table shows the land use:

Percent of watershed in pasture or range - 100	
Classification of range site condition based on production	
Exc. - 3%	Good - 32%
Fair - 50%	Poor - 15%
The general practice for good range utilization is 1 animal unit per 12 acres.	

GENERALLY REPRESENTS: Small tributary watersheds of the Central Great Plains Winter Wheat and Range Region specifically the Central Rolling Red Prairies land resource area (H-80) in Kansas, Oklahoma, and Texas.

MONTHLY PRECIPITATION AND RUNOFF (inches)							CHICKASHA, OKLAHOMA WATERSHED 5144 NEAR MIDDLEBURG AREA—1,456 ACRES (2.28 SQ. MILES)									
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967 P ₁ / O	.08 .069	.09 .057	2.02 .062	6.61 1.050	3.99 .204	2.33 .063	1.76 .027	1.58 .004	5.33 .108	2.82 .061	.33 .053	1.11 .061	28.05 1.819			
STA AVG P ₂ / O																
MEAN P ₃ / O																
67 YR	1.16	1.22	1.99	3.35	4.99	3.78	2.52	2.69	3.31	2.88	1.74	1.39	31.02			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	4-12	.3280	4-12	.2962	4-12	.4650	4-12	.579	4-12	.617	4-12	.639	4-12	.712	4-9	.869
MAXIMUMS FOR PERIOD OF RECORD																
1967 TO	4-12		4-12		4-12		4-12		4-12		4-12		4-12		4-9	
19	1967	.3280	1967	.2962	1967	.4650	1967	.579	1967	.617	1967	.639	1967	.712	1967	.869
Notes: Watershed conditions same as that described on previous page under WATERSHED CONDITIONS. For watershed map, see p. 69.21-6. For composite map, see 1965 edition of Hydrologic Data for Experimental Agricultural Watersheds in the United States, p. 69.7-21. 1/ Precipitation data obtained from a Thiessen weighted average of 9 gages on the watershed. 2/ Precipitation records began Jan. 1967; runoff records began Jan. 1967. 3/ Mean P based on 67-yr (1901-67) U.S. Weather Bureau period of record at Chickasha, Okla.; missing months estimated.																
MISCELLANEOUS DATA																
RUNOFF PEAK DATA: YEAR (1967): Maximum — Apr. 12, 481.8 cfs (6.84 ft). Minimum — No flow - periodically.																
PERIOD OF RECORD: Maximum — Apr. 12, 1967, 481.8 cfs (6.84 ft). Minimum — No flow.																
PEAK DISCHARGES: (Above base flow of 100 cfs) 1967 — Apr. 12, 481.8 cfs (6.84 ft).																
DAILY TEMPERATURE: See p. 69.7-3.																

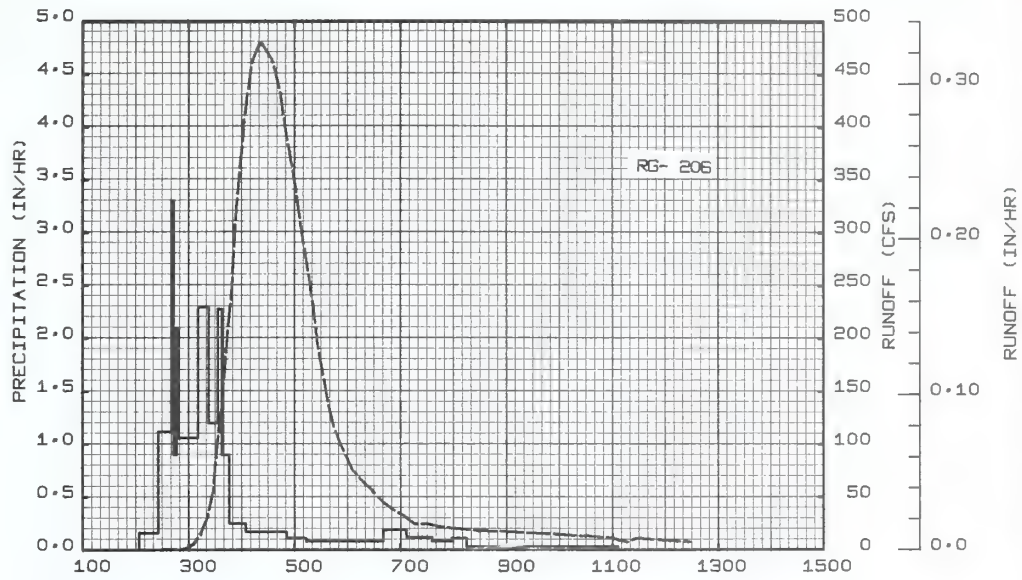
1967 DAILY PRECIPITATION (inches)						CHICKASHA, OKLAHOMA		WATERSHED 5144 NEAR MIDDLEBURG				
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.00	.07	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.54	.00	.15	.00
3	.00	.00	.00	.00	.00	.00	.13	.00	1.18	.00	.05	.00
4	.00	.00	.00	.00	.00	.00	.00	.99	.42	.00	.00	.00
5	.00	.00	.00	.00	1.11	.00	.13	.00	.57	.00	.00	.00
6	.00	.00	.04	.00	.01	.00	.00	.00	.03	.00	.00	.00
7	.00	.00	.00	.40	.00	.00	.00	.00	.04	.98	.00	.00
8	.00	.02	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	1.03	.00	.00	.00	.00	.00	.00	.01	.00
10	.00	.00	.00	.82	.00	.00	.00	.00	.00	.00	.00	.05
11	.00	.00	.00	.00	.00	.00	.00	.02	.00	.00	.00	.00
12	.00	.00	.01	2.71	.00	.07	.00	.00	.00	.00	.00	.00
13	.00	.00	.03	.53	.03	.00	.00	.00	.05	.00	.00	.03
14	.00	.00	.00	.00	.01	.00	.00	.00	.45	.00	.00	.11
15	.00	.00	.00	.00	.00	.00	.02	.00	.00	.80	.00	.07
16	.00	.00	.00	.00	.00	.00	.28	.00	.14	.00	.00	.63
17	.00	.00	.00	.00	.00	.00	.00	.33	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.35	.47	.00	.00	.00	.00	.00
19	.00	.00	.21	.31	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.81	1.12	.00	.00	.00	.65	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.30	.02	.11	.00	.00	.00
22	.00	.00	.86	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.21	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.02	.00	.00	.00	.00	.00
25	.00	.00	.30	.00	.00	1.10	.00	.00	.00	.00	.00	.00
26	.08	.00	.07	.00	.00	.60	.00	.00	1.15	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.41	.00	.00	.00	.03	.00
29	.00	-----	.00	.00	.62	.00	.00	.00	.00	.02	.08	.00
30	.00	-----	.05	.00	.88	.00	.00	.00	.00	.68	.00	.22
31	.00	-----	.45	-----	.21	-----	.00	.22	-----	.34	-----	.00
TOTAL	.08	.09	2.02	6.61	3.99	2.33	1.76	1.58	5.33	2.82	.33	1.11
STA AV												
NOTES	YEARLY PRECIPITATION 28.05 INCHES. PRECIPITATION VALUES ARE A THIESSEN WEIGHTED AVERAGE OF 9 GAGES ON THE WATERSHED. FIRST YEAR OF RECORD THEREFORE NO STA AV SHOWN.											
1967 MEAN DAILY DISCHARGE (cfs)						CHICKASHA, OKLAHOMA		WATERSHED 5144 NEAR MIDDLEBURG				
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.121	.156	.125	.122	.218	.216	.084	.004	.000	.060	.117	.112
2	.124	.178	.105	.114	.212	.214	.113	.006	.044	.060	.153	.116
3	.128	.168	.105	.118	.210	.162	.139	.001	.490	.084	.147	.117
4	.125	.173	.112	.113	.227	.143	.073	.115	.272	.058	.101	.114
5	.123	.181	.112	.096	2.92	.142	.101	.046	1.11	.050	.109	.102
6	.123	.155	.127	.101	1.30	.096	.053	.026	.086	.047	.105	.093
7	.121	.146	.119	.193	.324	.091	.051	.009	.060	.595	.089	.091
8	.116	.144	.093	.168	.270	.067	.052	.001	.052	.085	.092	.092
9	.118	.145	.093	2.36	.276	.054	.081	.000	.054	.075	.085	.103
10	.126	.144	.093	4.88	.272	.073	.075	.000	.055	.063	.093	.096
11	.135	.138	.097	.297	.288	.075	.024	.000	.058	.065	.084	.101
12	.139	.128	.106	.38.9	.301	.095	.026	.000	.050	.067	.088	.135
13	.144	.109	.116	4.55	.300	.077	.024	.000	.040	.070	.091	.133
14	.147	.101	.118	.967	.278	.052	.012	.000	.165	.064	.098	.125
15	.140	.092	.104	.619	.265	.053	.025	.000	.081	.781	.103	.116
16	.143	.092	.103	.508	.247	.063	.065	.000	.096	.120	.105	.196
17	.116	.092	.106	.375	.181	.077	.046	.000	.087	.090	.108	.225
18	.098	.092	.107	.363	.119	.091	.123	.001	.080	.082	.110	.115
19	.107	.093	.107	.470	.098	.120	.078	.001	.069	.079	.113	.117
20	.125	.093	.110	5.02	1.25	.054	.051	.002	.071	.075	.117	.117
21	.136	.104	.114	1.02	.315	.051	.104	.006	.340	.077	.125	.116
22	.125	.115	.267	.478	.208	.064	.058	.009	.070	.073	.121	.117
23	.126	.106	.169	.377	.167	.079	.029	.002	.051	.067	.117	.117
24	.139	.102	.118	.316	.124	.058	.027	.000	.049	.055	.115	.117
25	.156	.107	.159	.337	.093	.362	.018	.000	.046	.059	.112	.117
26	.216	.107	.174	.285	.088	.788	.017	.000	2.42	.063	.106	.117
27	.164	.109	.123	.270	.090	.154	.023	.000	.365	.063	.104	.118
28	.156	.124	.113	.287	.126	.103	.027	.000	.080	.078	.104	.118
29	.159	-----	.113	.310	.309	.093	.035	.000	.082	.125	.103	.118
30	.160	-----	.108	.268	.648	.075	.017	.000	.083	.211	.103	.118
31	.162	-----	.174	-----	.753	-----	.010	.000	-----	.203	-----	.118
MEAN	.136	.125	.122	2.14	.402	.128	.054	.007	.220	.121	.107	.120
INCHES	.069	.057	.062	1.050	.204	.063	.027	.004	.108	.061	.053	.061
NOTES	TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .01634. TO CONVERT DISCHARGE IN INCHES TO AC-FT, MULTIPLY BY 121.4 MEAN YEARLY DISCHARGE, 0.304 CFS. YIELD, 1.819 INCHES. MAXIMUM AND MINIMUM FLOWS EACH MONTH UNDERLINED.											

1967 SELECTED RUNOFF EVENTS			CHICKASHA, OKLAHOMA				WATERSHED 5144 NEAR MIDDLEBURG			
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)
Watershed conditions: See p. 69.24-1, this publication			Event of April 12, 1967							
			4-12	RG	206		4-12			
				0204	.00	.00		0228	.23	1/.0000
				0226	.16	.06		0257	.99	.0002
				0241	1.12	.34		0306	5.51	.0005
				0243	3.30	.45		0314	15.52	.0015
				0247	.90	.51		0322	32.17	.0036
				0249	2.10	.58		0328	56.11	.0066
				0311	1.06	.97		0331	89.09	.0091
				0323	2.30	1.43		0337	131.55	.0166
				0333	1.20	1.63		0342	184.96	.0256
				0338	2.28	1.82		0349	248.34	.0428
				0346	.90	1.94		0354	323.54	.0590
				0405	.25	2.02		0404	413.29	.1008
				0451	.17	2.15		0407	432.47	.1152
				0513	.11	2.19		0410	452.79	.1303
				0641	.08	2.30		0413	464.80	.1455
				0707	.19	2.38		0421	481.81	.1889
				0736	.12	2.44		0434	464.59	.2587
				0758	.08	2.47		0438	452.79	.2795
				0815	.11	2.50		0444	432.47	.3096
				1106	.03	2.57		0451	390.57	.3423
								0518	248.48	.4408
								0528	184.85	.4654
								0540	131.93	.4869
								0545	115.40	.4940
								0552	100.28	.5025
								0559	89.09	.5100
								0606	75.74	.5166
								0628	56.29	.5330
								0705	32.13	.5508
								0716	24.54	.5543
								0731	24.51	.5585
								0750	21.30	.5634
								0830	18.21	.5724
								0944	15.42	.5865
								1030	12.88	.5939
								1058	11.26	.5978
								1117	7.32	.5998
								1126	10.67	.6007
								1130	11.16	.6012
								1148	9.64	.6033
								1228	7.48	.6072

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY .0006808. FOR 30-DAY ANTECEDENT P AND Q, SEE P. 69.24-3. FOR ISOHYETAL MAP, SEE P. 69.7-7, THIS PUBLICATION. 1/ SOME INTERMEDIATE BREAKPOINTS HAVE BEEN REMOVED TO SHORTEN THE LISTING.

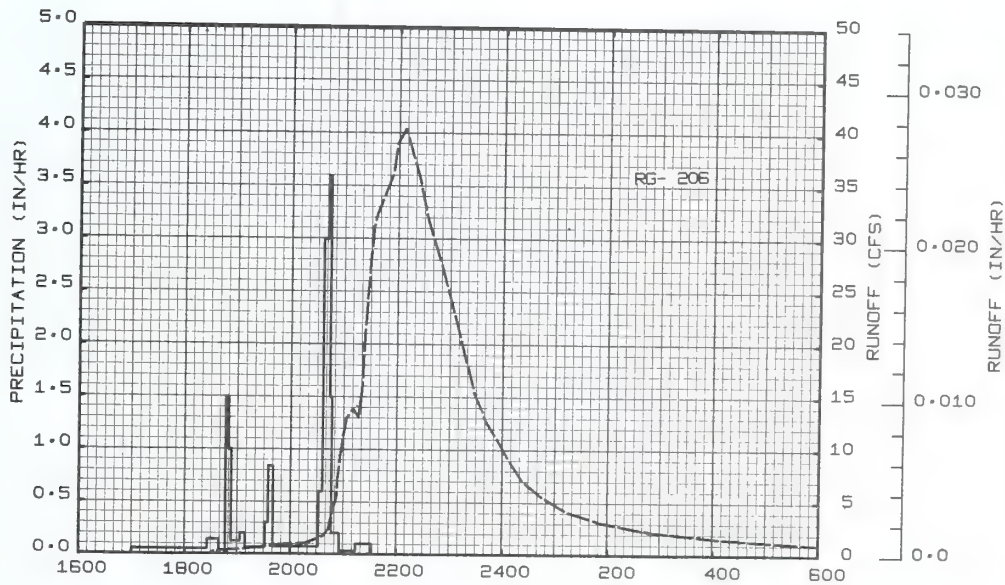
1967 SELECTED RUNOFF EVENTS			CHICKASHA, OKLAHOMA				WATERSHED 5144 NEAR MIDDLEBURG			
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)
Watershed conditions: See p. 69.24-1, this publication.			Event of May 5, 1967							
			5- 5	RG	206		5- 5	1833	.27	1/.0000
				1700	.00	.00		1955	.94	.0006
				1826	.05	.07		2018	1.05	.0009
				1839	.14	.10		2038	1.78	.0012
				1846	.00	.10		2043	2.40	.0013
				1850	1.50	.20		2048	4.21	.0015
				1853	1.00	.25		2052	5.52	.0017
				1903	.12	.27		2053	7.02	.0018
				1909	.20	.29		2058	10.71	.0023
				1931	.06	.31		2103	12.97	.0029
				1935	.30	.33		2110	13.86	.0040
				1940	.84	.40		2116	13.06	.0049
				2032	.07	.46		2120	15.55	.0056
				2036	.60	.50		2129	27.88	.0079
				2041	3.00	.75		2132	31.01	.0089
				2044	3.60	.93		2136	32.41	.0103
				2046	1.50	.98		2153	36.08	.0169
				2055	.20	1.01		2158	39.11	.0190
				2114	.03	1.02		2207	40.45	.0231
				2132	.10	1.05		2233	31.93	.0339
			5- 6			2300		24.27	.0425	
						2327		15.52	.0486	
						2341		12.69	.0509	
						0022		7.07	.0554	
						0045		5.49	.0571	
						0112		4.17	.0586	
						0150		3.11	.0601	
						0247		2.21	.0619	
						0411		1.49	.0636	
						0557		.99	.0651	

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY .0006808. FOR 30-DAY ANTECEDENT P AND Q, SEE P. 69.24-3, THIS PUBLICATION. 1/ SOME INTERMEDIATE BREAKPOINTS HAVE BEEN REMOVED TO SHORTEN THE LISTING.



APRIL 12, 1967

CHICKASHA, OKLAHOMA WATERSHED 5144



MAY 5- 6, 1967

CHICKASHA, OKLAHOMA WATERSHED 5144

CHICKASHA, OKLAHOMA WATERSHED 5145 NEAR MIDDLEBURG

LOCATION: WATERSHED — Small watershed near Highway 62 in the vicinity of Middleburg, in Grady County, Okla.; tributary of East Bitter Creek; Washita River; Red River Basin.

GAGING STATION — SE¼ sec. 5, T. 7 N., R. 5 W., lat. 35°06'25", long. 97°44'31", at artificial control about 400 feet downstream from county road bridge.

AREA: 252.8 acres (.395 sq. miles). See composite map, page 69.7-21 of Hydrologic Data for Experimental Agricultural Watersheds in the United States, 1965 publication.

Slope — Percent	0-1	1-3	3-5	5-8	8-12	12 and above	
Percent of area	0	0	35	12	33	20	1/

SOILS: Residual, derived from fine grained sandstone and shale materials. They are deep, fine textured soils on gently rolling to rolling slopes with more shallow soils on the breaks. 1/

Soil	Per- cent of area	Topsoil			Subsoil		Substratum		Internal drainage
		Avg. depth (in.)	Structure	Permea- bility	Structure	Permea- bility	Avg. depth to (in.)	Permea- bility	
Nash-Quinlan loam	50	8	Weak fine	Moderate	Granular	Moderate	30	Moderate	Medium
Zaneis loam	34	16	Moderate medium granular	Moderate	Moderate fine subangular blocky	Moderate	43	Moderate	Slow
Renfrow silt loam	16	14	Moderate fine granular	Moderate	Moderate fine blocky	Moderately slow	50	Moderately slow	Slow

Erosion class	1	2	3	4	
Percent of area	0	35	50	15	1/

Class	I	II	III	IV	V	VI	VII	
Percent of area	0	0	40	0	0	60	0	1/

1/ Information presented for general descriptive purposes and not intended to be precise data.

GEOLOGY: The geologic formations and their exposed surface area in percent are entirely Chickasha. The tributary contains only one geologic formation; therefore, the geology is relatively simple. The quality of surface and ground water is relatively good. See description of hydrogeology and general geology map in Hydrologic Data for Experimental Agricultural Watersheds in the United States, 1962, USDA Misc. Pub. 1070, pp. 69.7-8 and 9. Source of data: Oklahoma Geological Survey, Norman, Okla.; Bulletins 73, 87 and Circular 61.

SURFACE DRAINAGE: Good; length of principal waterway 1.3 miles.

CHARACTER OF FLOW: Ephemeral.

INSTRUMENTATION: **Precipitation:** Four recording weighing type gages with a 12-hour time scale. **Runoff:** The head-water gage consists of two FW-1 water level recorders, one with a 12-hour chart and one with a 192-hour chart, installed on an 18" gage well. Artificial control consists of a "V" notch weir with 2:1 side slopes made of reinforced concrete. Low flow measurements are made with a current meter by wading. Measurements are made during periods of extreme low flow by attaching a portable flume to the weir. High flow measurements are made from a bridge just upstream from the weir. Tape downs for the headwater are made from an outside gage reference point on the bridge and from a reference point inside the gage well. The tailwater gage consists of one FW-1 water level recorder with a 12-hour chart installed on an 18" gage well. Tape down for the tailwater gage is made inside the gage well from a reference point.

WATERSHED CONDITIONS: 100% of the watershed is presently in pasture or range, however, several years ago 25% of the watershed was terraced and farmed. There are still some active gullies, but healing is apparent. There are 3 farm ponds on the watershed. The following table shows the land use:

Percent of watershed in pasture or range - 100	
Classification of range site condition based on production	
Exc. - 10%	Good - 15%
Fair - 20%	Poor - 55%
The general practice for good range utilization is 1 animal unit per 15 acres.	

GENERALLY REPRESENTS: Small tributary watersheds of the Central Great Plains Winter Wheat and Range Region specifically the Central Rolling Red Prairies land resource area (R-80) in Kansas, Oklahoma, and Texas.

MONTHLY PRECIPITATION AND RUNOFF (inches)							CHICKASHA, OKLAHOMA WATERSHED 5145 NEAR MIDDLEBURG AREA — 252.8 ACRES (.395 SQ. MILES)							
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1967	P1/ O	.09 .000	.07 .000	2.09 .000	6.97 1.826	4.49 .268	2.21 .028	2.21 .011	1.62 .000	5.73 .240	2.91 .084	.38 .000	1.18 .000	29.95 2.457
STA AVG	P2/ O													
MEAN 67 YR	P3/ O	1.16	1.22	1.99	3.35	4.99	3.78	2.52	2.69	3.31	2.88	1.74	1.39	31.02

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	4-12	.7513	4-12	.5613	4-12	.7308	4-12	1.024	4-12	1.294	4-12	1.306	4-12	1.431	4-9	1.748

MAXIMUMS FOR PERIOD OF RECORD																
19 67 TO	4-12		4-12		4-12		4-12		4-12		4-12		4-12		4-9	
19 --	1967	.7513	1967	.5613	1967	.7308	1967	1.024	1967	1.294	1967	1.306	1967	1.431	1967	1.748

Notes: Watershed conditions same as that described on previous page under WATERSHED CONDITIONS. For watershed map, see p. 69.21-4. 1/ Precipitation data obtained from a Thiessen weighted average of 4 gages on the watershed. 2/ Precipitation records began Jan. 1967; runoff records began Jan. 1967. 3/ Mean P based on 67-yr (1901-67) U.S. Weather Bureau period of record at Chickasha, Okla.; missing months estimated.

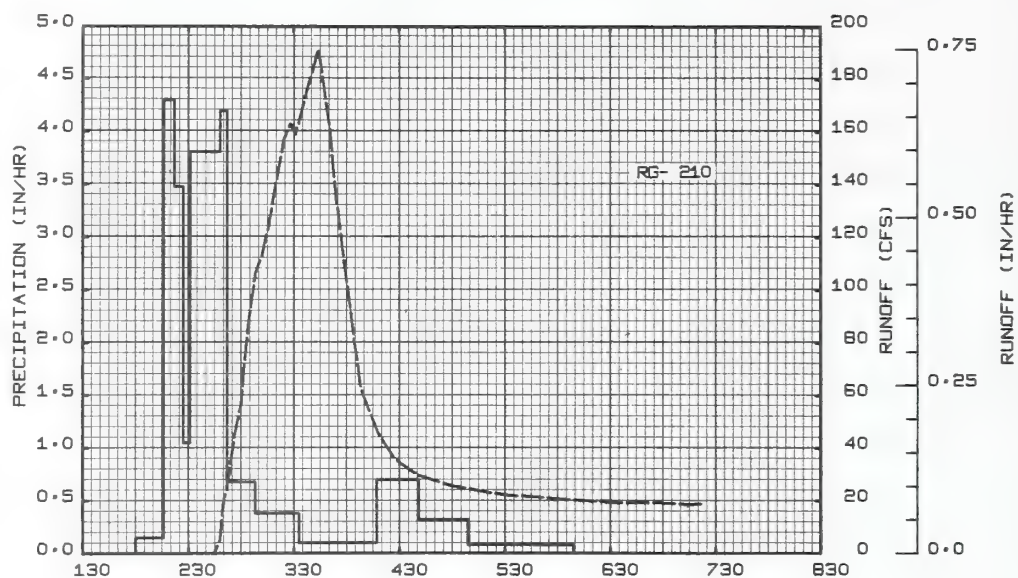
MISCELLANEOUS DATA																
<u>RUNOFF PEAK DATA:</u> YEAR (1967): Maximum — Apr. 12, 191.5 cfs (5.00 ft). Minimum — No flow - periodically. PERIOD OF RECORD: Maximum — Apr. 12, 1967, 191.5 cfs (5.00 ft). Minimum — No flow. PEAK DISCHARGES: (Above base flow of 100 cfs) 1967 — Apr. 12, 191.5 cfs (5.00 ft). <u>DAILY TEMPERATURE:</u> See p. 69.7-3.																

1967 DAILY PRECIPITATION (inches)						CHICKASHA, OKLAHOMA WATERSHED 5145 NEAR MIDDLEBURG						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.00	.05	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.59	.00	.15	.00
3	.00	.00	.00	.00	.00	.00	.17	.00	1.25	.00	.05	.00
4	.00	.00	.00	.00	.00	.00	.00	1.03	.49	.00	.00	.00
5	.00	.00	.00	.00	1.21	.00	.14	.00	.60	.00	.00	.00
6	.00	.00	.05	.00	.00	.00	.00	.00	.05	.00	.00	.00
7	.00	.00	.00	.43	.00	.00	.00	.00	.07	.86	.00	.00
8	.00	.02	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	1.04	.00	.00	.00	.00	.00	.00	.02	.00
10	.00	.00	.00	.94	.00	.00	.00	.00	.00	.00	.00	.05
11	.00	.00	.00	.00	.00	.00	.00	.03	.00	.00	.00	.00
12	.00	.00	.00	3.00	.00	.09	.00	.00	.00	.00	.00	.00
13	.00	.00	.02	.54	.04	.00	.00	.00	.07	.00	.00	.03
14	.00	.00	.00	.00	.02	.00	.00	.00	.50	.00	.00	.12
15	.00	.00	.00	.00	.00	.00	.03	.00	.00	1.00	.00	.08
16	.00	.00	.00	.00	.00	.00	.33	.00	.23	.00	.00	.66
17	.00	.00	.00	.00	.00	.00	.00	.33	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.29	.54	.00	.00	.00	.00	.00
19	.00	.00	.22	.35	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.67	1.26	.00	.00	.00	.58	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.46	.02	.12	.00	.00	.00
22	.00	.00	.89	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.20	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.03	.00	.00	.00	.00	.00
25	.00	.00	.35	.00	.00	.95	.00	.00	.00	.00	.00	.00
26	.09	.00	.08	.00	.00	.68	.00	.00	1.18	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.51	.00	.00	.00	.04	.00
29	.00	-----	.00	.00	.66	.00	.00	.00	.00	.02	.12	.00
30	.00	-----	.00	.00	1.06	.00	.00	.00	.00	.68	.00	.24
31	.00	-----	.48	-----	.24	-----	.00	.21	-----	.35	-----	.00
TOTAL	.09	.07	2.09	6.97	4.49	2.21	2.21	1.62	5.73	2.91	.38	1.18
STA AV												

NOTES: YEARLY PRECIPITATION 29.95 INCHES. PRECIPITATION VALUES ARE A THIESSEN WEIGHTED AVERAGE OF 4 GAGES ON THE WATERSHED. FIRST YEAR OF RECORD THEREFORE NO STA AV SHOWN.

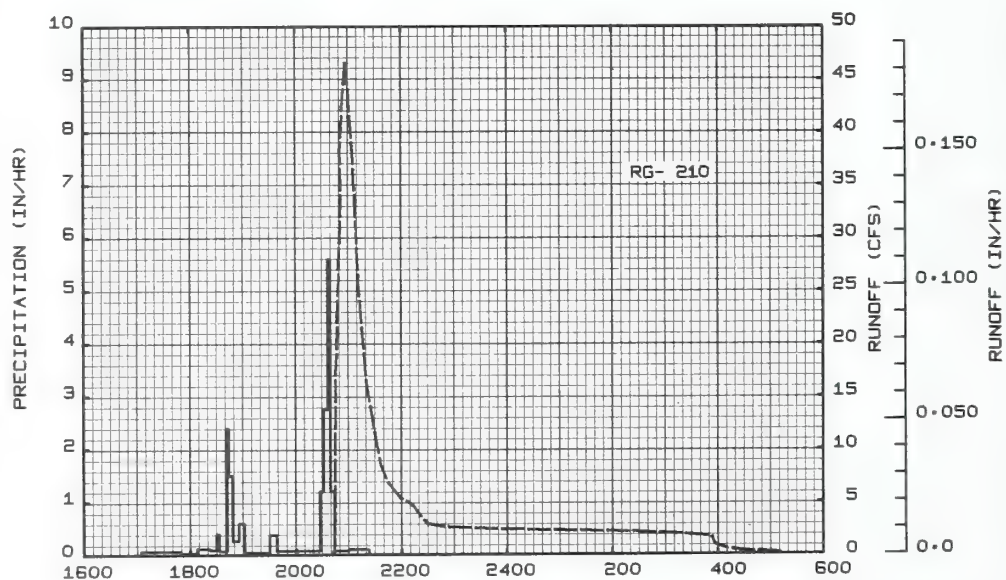
1967 MEAN DAILY DISCHARGE (cfs)						CHICKASHA, OKLAHOMA WATERSHED 5145 NEAR MIDDLEBURG						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
2	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
3	.000	.000	.000	.000	.000	.000	.000	.000	.602	.000	.000	.000
4	.000	.000	.000	.000	.000	.000	.000	.000	.041	.000	.000	.000
5	.000	.000	.000	.000	1.16	.000	.000	.000	.736	.000	.000	.000
6	.000	.000	.000	.000	.432	.000	.000	.000	.000	.000	.000	.000
7	.000	.000	.000	.000	.000	.000	.000	.000	.000	.189	.000	.000
8	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
9	.000	.000	.000	.896	.000	.000	.000	.000	.000	.000	.000	.000
10	.000	.000	.000	2.47	.000	.000	.000	.000	.000	.000	.000	.000
11	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
12	.000	.000	.000	13.2	.000	.000	.000	.000	.000	.000	.000	.000
13	.000	.000	.000	1.34	.000	.000	.000	.000	.000	.000	.000	.000
14	.000	.000	.000	.005	.000	.000	.000	.000	.009	.000	.000	.000
15	.000	.000	.000	.000	.000	.000	.000	.000	.000	.703	.000	.000
16	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
17	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
18	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
19	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
20	.000	.000	.000	1.41	.584	.000	.000	.000	.023	.000	.000	.000
21	.000	.000	.000	.069	.004	.000	.113	.000	.056	.000	.000	.000
22	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
23	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
24	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
25	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
26	.000	.000	.000	.000	.000	.293	.000	.000	1.07	.000	.000	.000
27	.000	.000	.000	.000	.000	.000	.000	.000	.009	.000	.000	.000
28	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
29	.000	-----	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
30	.000	-----	.000	.000	.410	.000	.000	.000	.000	.000	.000	.000
31	.000	-----	.000	-----	.259	-----	.000	.000	-----	.000	-----	.000
MEAN	.000	.000	.000	.646	.092	.010	.004	.000	.085	.029	.000	.000
INCHES	.000	.000	.000	1.826	.268	.028	.011	.000	.240	.084	.000	.000

NOTES: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .09415. TO CONVERT DISCHARGE IN INCHES TO AC-FT, MULTIPLY BY 21.07 MEAN YEARLY DISCHARGE, 0.071 CFS. YIELD, 2.457 INCHES. MAXIMUM AND MINIMUM FLOWS EACH MONTH UNDERLINED.



APRIL 12, 1967

CHICKASHA, OKLAHOMA WATERSHED 5145



MAY 5- 6, 1967

CHICKASHA, OKLAHOMA WATERSHED 5145

CHICKASHA, OKLAHOMA WATERSHED 5146 NEAR MIDDLEBURG

LOCATION: WATERSHED — Small watershed near Highway 62 in the vicinity of Middleburg, in Grady County, Okla.; tributary of East Bitter Creek; Washita River; Red River Basin.

GAGING STATION — Ne½ sec. 5, T. 7 N., R. 5 W., lat. 35°06'50", long. 97°44'34", at artificial control about 600 feet downstream from county road bridge.

AREA: 762 acres (1.19 sq. miles). See composite map, page 69.7-21 of Hydrologic Data for Experimental Agricultural Watersheds in the United States, 1965 publication.

SLOPES:	Slope — Percent	0-1	1-3	3-5	5-8	8-12	12 and above	
	Percent of area	0	13	37	8	33	9	1/

SOILS: Residual, derived from fine grained sandstone and shale materials. They are deep, fine textured soils on gently rolling to rolling slopes with more shallow soils on the breaks. 1/

Soil	Per- cent of area	Topsoil			Subsoil		Substratum		Internal drainage
		Avg. depth (in.)	Structure	Permea- bility	Structure	Permea- bility	Avg. depth to (in.)	Permea- bility	
Nash-Quinlan loam	40	8	Weak fine	Moderate	Granular	Moderate	30	Moderate	Medium
Grant-Renfrow silt loam	36	12	Moderate medium fine granular	Moderate	Moderate medium coarse subangular blocky	Moderate	50	Moderately slow	Slow
Zaneis-Kingfisher silt loam	18	10	Moderate medium granular	Moderate	Moderate fine subangular blocky	Moderate	43	Moderately slow	Slow
Steep Stony loam	6	12	Moderate weak fine granular	Moderate	Weak fine granular	Moderate	36	Moderately slow	Medium

EROSION:	Erosion class	1	2	3	4	
	Percent of area	0	50	40	10	1/

LAND CAPABILITY:	Class	I	II	III	IV	V	VI	VII	
	Percent of area	0	10	33	6		43	8	1/

1/ Information presented for general descriptive purposes and not intended to be precise data.

GEOLOGY: The geologic formations and their exposed surface area in percent are entirely Chickasha. The tributary contains only one geologic formation; therefore, the geology is relatively simple. The quality of surface and ground water is relatively good. See description of hydrogeology and general geology map in Hydrologic Data for Experimental Agricultural Watersheds in the United States, 1962, USDA Misc. Pub. 1070, pp. 69.7-8 and 9. Source of data: Oklahoma Geological Survey, Norman, Okla.; Bulletins 73, 87 and Circular 61.

SURFACE DRAINAGE: Good; length of principal waterway 1.8 miles.

CHARACTER OF FLOW: Spring fed intermittent.

INSTRUMENTATION: Precipitation: Six recording weighing type gages, of which 5 have a 12-hour time scale and 1 has a 24-hour time scale. Runoff: The headwater gage consists of two FW-1 water level recorders, one with a 12-hour chart and one with a 192-hour chart, installed on an 18" gage well. Artificial control consists of a "V" notch weir with 2:1 side slopes made of steel sheet piling with a reinforced concrete cap. Low flow measurements are made with a current meter by wading. Measurements are made during periods of extreme low flow by attaching a portable flume to the weir. High flow measurements are made from a bridge just upstream from the weir. Tape downs are made from an outside gage reference point on the bridge and from a reference point inside the gage well. No tailwater gage.

WATERSHED CONDITIONS: 100% of the watershed is pasture or range. 20% of the area was farmed at one time. Some active gullies are still present. There are 6 farm ponds in the watershed. The following table shows the land use:

Percent of watershed in pasture or range - 100	
Classification of range site condition based on production	
Good - 20%	Fair - 30%
Poor - 50%	
The general practice for good range utilization is 1 animal unit per 12 acres.	

GENERALLY REPRESENTS: Small tributary watersheds of the Central Great Plains Winter Wheat and Range Region specifically the Central Rolling Red Prairies land resource area (H-80) in Kansas, Oklahoma, and Texas.

MONTHLY PRECIPITATION AND RUNOFF (inches)							CHICKASHA, OKLAHOMA WATERSHED 5146 NEAR MIDDLEBURG AREA—762 ACRES (1.19 SQ. MILES)									
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	P 1/ Q	.09 .000	.09 .000	2.18 .000	6.78 1.126	3.91 .148	2.52 .020	1.84 .000	1.71 .000	5.43 .047	2.67 .009	.33 .000	1.12 .000	28.67 1.350		
STA. AVG P 2/ Q																
MEAN 67 YR	P 3/ Q	1.16	1.22	1.99	3.35	4.99	3.78	2.52	2.69	3.31	2.88	1.74	1.39	31.02		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	4-12	.4914	4-12	.4202	4-12	.6123	4-12	.716	4-12	.746	4-12	.758	4-12	.827	4-9	.949
MAXIMUMS FOR PERIOD OF RECORD																
1967 TO	4-12		4-12		4-12		4-12		4-12		4-12		4-12		4-9	
1967	1967	.4914	1967	.4202	1967	.6123	1967	.716	1967	.746	1967	.758	1967	.827	1967	.949
Notes: Watershed conditions same as that described on previous page under <u>WATERSHED CONDITIONS</u> . For watershed map, see p. 69.21-4. 1/ Precipitation data obtained from a Thiessen weighted average of 6 gages on the watershed. 2/ Precipitation records began Jan. 1967; runoff records began Jan. 1967. 3/ Mean P based on 67-yr (1901-67) U.S. Weather Bureau period of record at Chickasha, Okla.; missing months estimated.																
MISCELLANEOUS DATA																
<u>RUNOFF PEAK DATA:</u> YEAR (1967): Maximum — Apr. 12, 377.4 cfs (6.13 ft). Minimum — No flow - periodically. PERIOD OF RECORD: Maximum — Apr. 12, 1967, 377.4 cfs (6.13 ft). Minimum — No flow. PEAK DISCHARGES: (Above base flow of 100 cfs) 1967 — Apr. 12, 377.4 cfs (6.13 ft). <u>DAILY TEMPERATURE:</u> See p. 69.7-3.																

1967 DAILY PRECIPITATION (inches)						CHICKASHA, OKLAHOMA WATERSHED 5146 NEAR MIDDLEBURG						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.00	.07	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.49	.00	.15	.00
3	.00	.00	.00	.00	.00	.00	.13	.00	1.30	.00	.05	.00
4	.00	.00	.00	.00	.00	.00	.00	1.09	.42	.00	.00	.00
5	.00	.00	.00	.00	1.13	.00	.10	.00	.56	.00	.00	.00
6	.00	.00	.04	.00	.01	.00	.00	.00	.03	.00	.00	.00
7	.00	.00	.00	.40	.00	.00	.00	.00	.05	.95	.00	.00
8	.00	.02	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	1.01	.00	.00	.00	.00	.00	.00	.01	.00
10	.00	.00	.00	.75	.00	.00	.00	.00	.00	.00	.00	.05
11	.00	.00	.00	.00	.00	.00	.00	.02	.00	.00	.00	.00
12	.00	.00	.02	2.81	.00	.06	.00	.00	.00	.00	.00	.00
13	.00	.00	.02	.54	.03	.00	.00	.00	.05	.00	.00	.03
14	.00	.00	.00	.00	.01	.00	.00	.00	.44	.00	.00	.11
15	.00	.00	.00	.00	.00	.00	.01	.00	.00	.76	.00	.07
16	.00	.00	.00	.00	.00	.00	.27	.00	.18	.00	.00	.63
17	.00	.00	.00	.00	.00	.00	.00	.36	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.55	.46	.00	.00	.00	.00	.00
19	.00	.00	.21	.33	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.94	1.04	.00	.00	.00	.68	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.38	.03	.11	.00	.00	.00
22	.00	.00	.96	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.24	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.04	.00	.00	.00	.00	.00
25	.00	.00	.31	.00	.00	1.11	.00	.00	.00	.00	.00	.00
26	.09	.00	.07	.00	.00	.56	.00	.00	1.12	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.45	.00	.00	.00	.03	.00
29	.00	-----	.00	.00	.61	.00	.00	.00	.00	.02	.08	.00
30	.00	-----	.05	.00	.88	.00	.00	.00	.00	.64	.00	.23
31	.00	-----	.50	-----	.20	-----	.00	.21	-----	.30	-----	.00
TOTAL	.09	.09	2.18	6.78	3.91	2.52	1.84	1.71	5.43	2.67	.33	1.12
STA AV												
NOTES												
YEARLY PRECIPITATION 28.67 INCHES. PRECIPITATION VALUES ARE A THIESSEN WEIGHTED AVERAGE OF 6 GAGES ON THE WATERSHED. FIRST YEAR OF RECORD THEREFORE NO STA AV SHOWN.												
1967 MEAN DAILY DISCHARGE (cfs)						CHICKASHA, OKLAHOMA WATERSHED 5146 NEAR MIDDLEBURG						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.000	.000	.000	.000	.080	.047	.000	.000	.000	.000	.000	.000
2	.000	.000	.000	.000	.069	.032	.000	.000	.000	.000	.000	.000
3	.000	.000	.000	.000	.063	.027	.000	.000	.126	.000	.000	.000
4	.000	.000	.000	.000	.060	.021	.000	.000	.033	.000	.000	.000
5	.000	.000	.000	.000	2.01	.015	.000	.000	.360	.000	.000	.000
6	.000	.000	.000	.000	.349	.009	.000	.000	.000	.000	.000	.000
7	.000	.000	.000	.000	.100	.008	.000	.000	.000	.066	.000	.000
8	.000	.000	.000	.000	.088	.011	.000	.000	.000	.000	.000	.000
9	.000	.000	.000	.928	.074	.003	.000	.000	.000	.000	.000	.000
10	.000	.000	.000	2.07	.068	.000	.000	.000	.000	.000	.000	.000
11	.000	.000	.000	.026	.051	.002	.000	.000	.000	.000	.000	.000
12	.000	.000	.000	24.2	.047	.001	.000	.000	.000	.000	.000	.000
13	.000	.000	.000	2.27	.054	.003	.000	.000	.000	.000	.000	.000
14	.000	.000	.000	.345	.055	.000	.000	.000	.000	.000	.000	.000
15	.000	.000	.000	.255	.045	.000	.000	.000	.000	.207	.000	.000
16	.000	.000	.000	.214	.042	.000	.000	.000	.000	.000	.000	.000
17	.000	.000	.000	.163	.064	.000	.000	.000	.000	.000	.000	.000
18	.000	.000	.000	.155	.083	.075	.000	.000	.000	.000	.000	.000
19	.000	.000	.000	.186	.072	.009	.000	.000	.000	.000	.000	.000
20	.000	.000	.000	3.65	.420	.001	.000	.000	.000	.000	.000	.000
21	.000	.000	.000	.331	.078	.000	.000	.000	.000	.000	.000	.000
22	.000	.000	.000	.183	.052	.000	.000	.000	.000	.000	.000	.000
23	.000	.000	.000	.158	.037	.000	.000	.000	.000	.000	.000	.000
24	.000	.000	.008	.138	.029	.000	.000	.000	.000	.000	.000	.000
25	.000	.000	.000	.146	.019	.132	.000	.000	.000	.000	.000	.000
26	.000	.000	.000	.124	.019	.254	.000	.000	.955	.000	.000	.000
27	.000	.000	.000	.129	.018	.005	.000	.000	.045	.000	.000	.000
28	.000	.000	.000	.117	.017	.000	.000	.000	.000	.000	.000	.000
29	.000	-----	.000	.127	.267	.000	.000	.000	.000	.000	.000	.000
30	.000	-----	.000	.112	.233	.000	.000	.000	.000	.000	.000	.000
31	.000	-----	.000	-----	.085	-----	.000	.000	-----	.000	-----	.000
MEAN	.000	.000	.000	1.20	.153	.022	.000	.000	.051	.009	.000	.000
INCHES	.000	.000	.000	1.126	.148	.020	.000	.000	.047	.009	.000	.000
NOTES TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .03125. TO CONVERT DISCHARGE IN INCHES TO AC-FT, MULTIPLY BY 63.47 MEAN YEARLY DISCHARGE, 0.118 CFS. YIELD, 1.350 INCHES. MAXIMUM AND MINIMUM FLOWS EACH MONTH UNDERLINED.												

1967 SELECTED RUNOFF EVENTS			CHICKASHA, OKLAHOMA				WATERSHED 5146 NEAR MIDDLEBURG			
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)
Watershed conditions: See p. 69.26-1, this publication.			Event of April 12, 1967							
			4-12	RG	211		4-12			
				0207	.00	.00		0217	.04	1/.0000
				0215	.23	.03		0255	1.40	.0002
				0223	3.53	.50		0300	19.54	.0011
				0234	3.22	1.09		0301	25.84	.0016
				0246	3.10	1.71		0304	39.23	.0038
				0253	4.29	2.21		0305	46.34	.0047
				0314	.49	2.38		0338	312.54	.1413
				0335	.31	2.49		0339	329.51	.1482
				0416	.07	2.54		0341	342.66	.1628
				0439	.39	2.69		0342	351.87	.1703
				0507	.21	2.79		0344	360.25	.1858
				0607	.07	2.86		0346	366.76	.2016
								0349	372.95	.2257
								0352	377.38	.2501
								0359	359.85	.3061
								0403	350.32	.3369
								0412	318.86	.4021
								0418	290.78	.4419
								0422	274.62	.4665
								0430	223.01	.5098
								0451	116.73	.5864
								0454	107.12	.5936
								0458	93.49	.6023
								0507	76.21	.6188
								0511	67.46	.6250
								0524	51.15	.6418
								0527	46.96	.6450
								0531	44.75	.6489
								0535	41.33	.6527
								0538	38.21	.6553
								0542	35.28	.6585
								0555	26.02	.6670
								0614	17.87	.6760
								0626	14.82	.6802
								0629	13.93	.6812
								0637	12.65	.6835
								0648	11.50	.6864
								0740	10.24	.6982
								0809	10.96	.7049
								0836	10.70	.7113
								0853	9.93	.7151
								0917	8.49	.7199
								1043	4.55	.7317

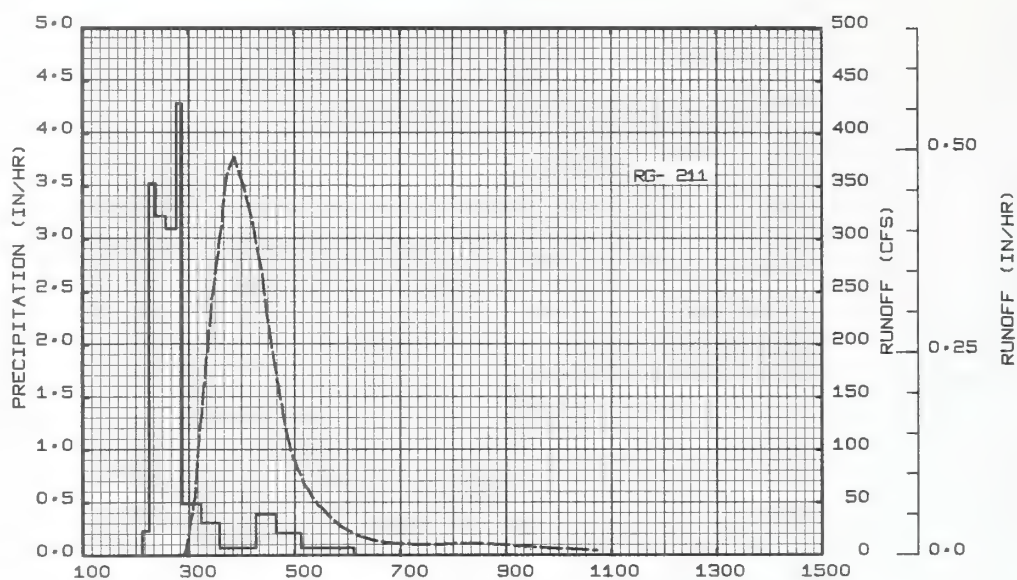
NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY .001302. FOR 30-DAY ANTECEDENT P AND Q, SEE P. 69.26-3. FOR ISOHYETAL MAP, SEE P. 69.7-7, THIS PUBLICATION. 1/ SOME INTERMEDIATE BREAKPOINTS HAVE BEEN REMOVED TO SHORTEN THE LISTING.

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY .001302. FOR 30-DAY ANTECEDENT P AND Q, SEE P. 69.26-3. FOR ISOHYETAL MAP, SEE P. 69.7-7, THIS PUBLICATION. 1/ SOME INTERMEDIATE BREAKPOINTS HAVE BEEN REMOVED TO SHORTEN THE LISTING.

1967 SELECTED RUNOFF EVENTS			CHICKASHA, OKLAHOMA				WATERSHED 5146 NEAR MIDDLEBURG				
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)	
Watershed conditions: See p. 69.26-1, this publication.			5- 5	Event of May 5, 1967			5- 5	1900	.11	1/.0000	
				RG	211			2016	.18	.0002	
				1717	.00	.00		2034	.22	.0003	
				1823	.03	.03		2038	.29	.0004	
				1834	.11	.05		2048	6.07	.0007	
				1844	.24	.09					
				1848	1.20	.17					
				1853	.72	.23		2055	26.28	.0031	
				1900	.17	.25		2057	30.00	.0044	
				1905	.48	.29		2100	32.83	.0064	
				1934	.04	.31		2105	38.35	.0103	
				1938	.45	.34		2107	40.13	.0120	
				2000	.08	.37		2110	41.86	.0147	
				2030	.06	.40		2111	43.14	.0156	
				2032	1.50	.45		2113	42.55	.0175	
				2038	2.60	.71		2121	38.02	.0245	
				2042	4.20	.99		2123	35.68	.0261	
				2044	1.20	1.03		2127	31.83	.0290	
				2049	.36	1.06		2130	29.41	.0310	
				2120	.06	1.09		2136	26.32	.0346	
				2132	.10	1.11		2139	25.30	.0363	
								2146	24.73	.0401	
								2153	23.92	.0438	
								2200	22.02	.0473	
								2208	19.35	.0509	
								2214	16.56	.0532	
								2217	14.66	.0542	
								2221	13.36	.0555	
								2236	9.28	.0591	
								2240	8.23	.0599	
								2252	6.40	.0618	
								2259	5.43	.0627	
								2305	4.64	.0633	
								2320	3.63	.0647	
								2338	2.73	.0659	
								5- 6	0000	2.08	.0671
									0044	1.37	.0687
									0133	.90	.0699
									0207	.68	.0705
									0240	.56	.0709
									0427	.34	.0719

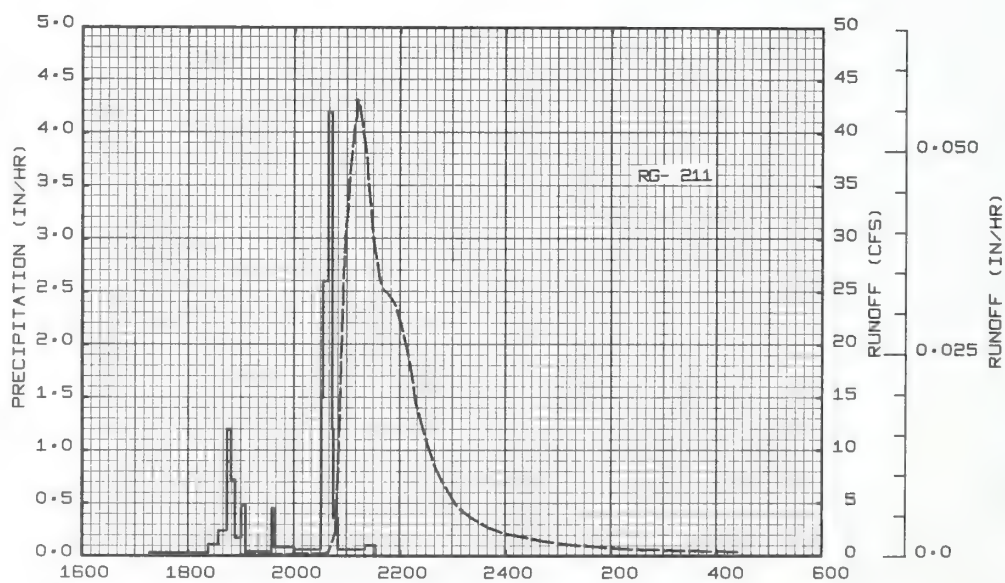
NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY .001302. FOR 30-DAY ANTECEDENT P AND Q, SEE P. 69.26-3, THIS PUBLICATION. 1/ SOME INTERMEDIATE BREAKPOINTS HAVE BEEN REMOVED TO SHORTEN THE LISTING.

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY .001302. FOR 30-DAY ANTECEDENT P AND Q, SEE P. 69.26-3, THIS PUBLICATION. 1/ SOME INTERMEDIATE BREAKPOINTS HAVE BEEN REMOVED TO SHORTEN THE LISTING.



APRIL 12, 1967

CHICKASHA, OKLAHOMA WATERSHED 5146



MAY 5-6, 1967

CHICKASHA, OKLAHOMA WATERSHED 5146

CHICKASHA, OKLAHOMA WATERSHED 311 NEAR POCASSETT

LOCATION: WATERSHED — Salt Creek Watershed $\frac{1}{2}$ mile east of U. S. Highway 81 near Pocassett, in Grady County, Okla.; tributary to Washita River; Red River Basin.

GAGING STATION — NW $\frac{1}{4}$ sec. 28, T. 8 N., R. 7 W., lat. 35°08'44", long. 97°57'30".

AREA: 15,206 acres (23.76 sq. miles).

SLOPES:	Slope — Percent	0-1	1-3	3-5	5-8	8+	
	Percent of area	15.5	24	35	14	11.5	1/

SOILS: Residual, derived from siltstone, shale, sandstone, and terrace and flood plain materials. 1/

Soil	Per- cent of area	Topsoil			Subsoil		Substratum		Internal drainage
		Avg. depth (in.)	Structure	Permea- bility	Structure	Permea- bility	Avg. depth to(in.)	Permea- bility	
McLain Port-Yahola silt loam	15	16	Moderate medium granular	Moderately slow	Moderate medium granular	Moderately slow	60+	Moderate	Medium
Kingfisher Renfrow silt loam	60	10	Moderate medium granular	Moderately slow	Moderate medium granular	Moderately slow	46	Moderately slow	Slow
Nash-Grant loam	15	10	Moderate fine granular	Moderate	Moderate fine granular	Moderate	40	Moderate	Medium
Quinlan Lucien loam	10	5	Moderate fine	Moderately slow	Moderate medium granular	Moderate	20	Moderate	Medium

EROSION:	Erosion class	1	2	3	4	
	Percent of area	20	30	35	15	1/

LAND CAPABILITY:	Class	I	II	III	IV	V	VI	VII	
	Percent of area	15	20	46	4	0	15	0	1/

1/ Information presented for general descriptive purposes and not intended to be precise data.

GEOLOGY: The geologic formations and their exposed surface area in percent are: Undifferentiated Dog Creek shale and Blaine formation, 82%, located over the greatest portion of the upland; Marlow formation, 8%, located on the highest elevations of the upper portion of the watershed; Chickasha formation, 6%, located on the side slopes of the major drainageways on the lower portion of the watershed; and alluvium, 4%, located on the bottoms of the major drainageways. The quality of the surface water is fair, while both quality and quantity of the ground water is poor due to shale and dissolved calcium sulfate. Source of data: Oklahoma Geological Survey, Norman, Okla., Bulletin 73.

SURFACE DRAINAGE: Fair; length of principal waterway 9.6 miles.

CHARACTER OF FLOW: Perennial, continuous.

INSTRUMENTATION: **Precipitation:** Nine recording weighing type gages, 8 of which have a 24-hour time scale and 1 which has a 12-hour time scale. **Runoff:** Staff gage, datum 1,097.00 ft. above m.s.l., Stevens A-35 recorder with 9.6 inches per day time scale installed in 24-inch well on downstream side of county road bridge. Slope station with same instrumentation and datum about 500 feet downstream. Stable channel with seasonal variation in amount of vegetation. Low flow current meter measurements made by wading. High flow current meter measurements made by crane from county road bridge. Measurements are made during each major event and periodically.

WATERSHED CONDITIONS: Cultivated land is mostly small grains, with alfalfa and row crops along creek bottoms. The pasture or range land is mostly short grass on moderately steep slopes. About 10% is severely eroded.

Percent of watershed in							Pasture or range - 64 Classification or range site condition based on production Exc. - 2% Good - 48% Fair - 40% Poor - 10% The general practice for good range utilization is 1 animal unit per 14 acres.
Cultivation - 36							
Alfalfa - 3	Sowed crops - 31			Row crops - 2			
Average yield ton/ac	Wheat yield bu/ac	Oats yield bu/ac	Barley yield bu/ac	Milo yield bu/ac	Cotton yield-lint lb/ac		
2.5-3	26	38	37	27	200		

GENERALLY REPRESENTS: Small tributary watersheds of the Central Great Plains Winter Wheat and Range Region specifically the Central Rolling Red Prairies land resource area (H-80) in Kansas, Oklahoma, and Texas.

MONTHLY PRECIPITATION AND RUNOFF (inches)						CHICKASHA, OKLAHOMA WATERSHED 311 NEAR POCASSETT AREA — 15,206 ACRES (23.76 SQ. MILES)										
MONTH YEAR		JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	P1/ Q	.63 .000	.18 .001	2.03 .002	6.24 1.773	2.64 .079	3.48 .072	1.42 .002	1.33 .000	5.28 .070	3.39 .300	.23 .008	.99 .010	27.84 2.317		
STA. AVG P2/ Q																
MEAN P3/ Q																
67 YR		1.16	1.22	1.99	3.35	4.99	3.78	2.52	2.69	3.31	2.88	1.74	1.39	31.02		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	4-12	.3196	4-12	.3140	4-12	.6000	4-12	1.201	4-12	1.310	4-12	1.338	4-12	1.424	4-9	1.720
MAXIMUMS FOR PERIOD OF RECORD 4/																
19 67 TO	4-12	.3196	4-12	.3140	4-12	.6000	4-12	1.201	4-12	1.310	4-12	1.338	4-12	1.424	4-9	1.720
19 --	1967		1967		1967		1967		1967		1967		1967		1967	
NOTES: Watershed conditions same as that described on previous page under <u>WATERSHED CONDITIONS</u> . For watershed map see p. 69.27-4; for composite map see Hydrologic Data for Experimental Agricultural Watersheds in the United States, 1965, p. 69.7-21. 1/ Precipitation data obtained from a Thiessen weighted average of 9 gages on the watershed. 2/ Precipitation records began Jan. 1967; runoff records began Jan. 1967. 3/ Mean P based on 67-yr (1901-67) U. S. Weather Bureau record period at Chickasha, Okla.; missing months estimated. 4/ Maximum for period of record same as annual maximum discharges and annual maximum volumes for selected time intervals because period of record began in 1967.																
MISCELLANEOUS DATA																
<u>RUNOFF PEAK DATA:</u> YEAR (1967): Maximum — Apr. 12, 4,900 cfs (16.10 ft). Minimum — Jan. 1 - no flow (1.60 ft). PERIOD OF RECORD: Maximum — Apr. 12, 1967, 4,900 cfs (16.10 ft). Minimum — No flow. Period of record began Jan. 1967. PEAK DISCHARGES: (Above base flow of 400 cfs) 1967 - Apr. 12, 4,900 cfs (16.10 ft); Oct. 7, 708 cfs (11.11 ft). <u>DAILY TEMPERATURE:</u> See p. 69.7-3.																
NO SELECTED RUNOFF EVENT REPORTED.																

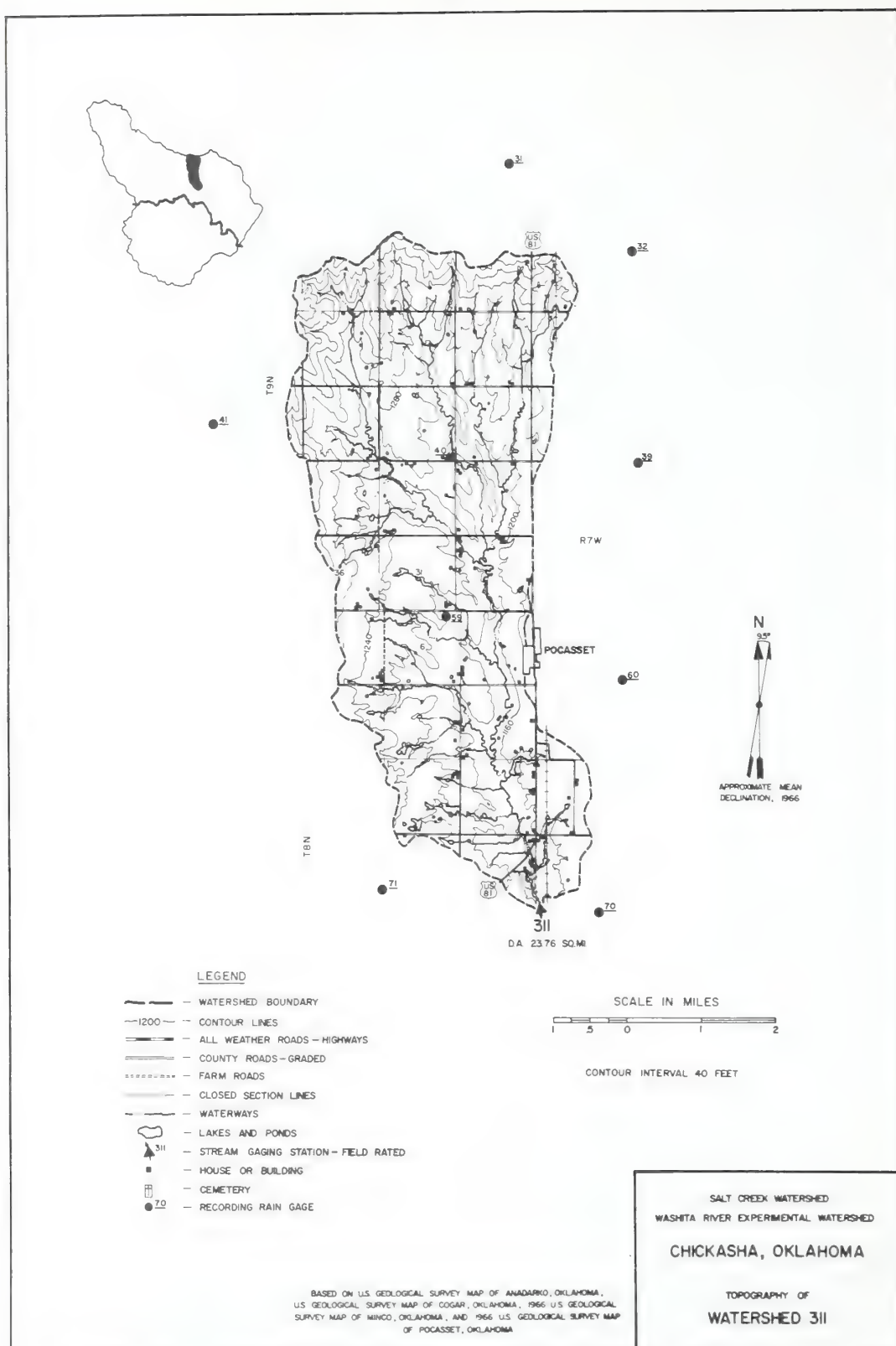
1967 DAILY PRECIPITATION (inches)						CHICKASHA, OKLAHOMA WATERSHED 311 NEAR POCASSET						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.00	.12	.00	.00	.01	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.02	.00	.66	.00	.16	.00
3	.00	.00	.00	.00	.00	.00	.08	.08	1.30	.00	.01	.00
4	.00	.00	.00	.00	.00	.00	.00	.79	.19	.00	.00	.06
5	.00	.00	.00	.00	1.01	.00	.28	.00	.79	.00	.00	.00
6	.00	.00	.02	.00	.03	.00	.00	.00	.11	.00	.00	.00
7	.00	.00	.00	.26	.00	.00	.00	.00	.02	2.22	.00	.00
8	.00	.06	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.56	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.36	.00	.00	.00	.00	.00	.00	.00	.07
11	.00	.00	.00	.00	.00	.04	.00	.01	.00	.00	.00	.00
12	.00	.00	.19	3.91	.00	.10	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.61	.06	.00	.00	.00	.05	.00	.00	.02
14	.00	.00	.00	.00	.01	.00	.00	.04	.35	.00	.00	.06
15	.00	.00	.00	.00	.00	.00	.01	.00	.00	.32	.00	.06
16	.00	.00	.00	.08	.00	.11	.28	.00	.02	.00	.00	.51
17	.00	.00	.00	.00	.00	.05	.00	.05	.00	.00	.00	.01
18	.00	.00	.00	.00	.00	.02	.60	.00	.00	.00	.00	.00
19	.00	.00	.53	.40	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.01	.04	.60	.00	.00	.00	.67	.00	.00	.00
21	.00	.00	.00	.00	.00	.01	.00	.01	.11	.00	.00	.03
22	.00	.00	.67	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.96	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.20	.00	.00	.00	.00	.00	.00
25	.60	.00	.23	.00	.00	1.80	.00	.00	.00	.00	.00	.00
26	.03	.00	.02	.00	.00	.17	.02	.00	1.01	.00	.00	.00
27	.00	.00	.00	.00	.00	.01	.01	.00	.00	.00	.00	.00
28	.00	.00	.00	.02	.04	.00	.12	.00	.00	.00	.01	.00
29	.00		.00	.00	.32	.00	.00	.00	.00	.00	.05	.00
30	.00		.11	.00	.50	.00	.00	.00	.00	.47	.00	.17
31	.00		.25		.06		.00	.35		.38		.00
TOTAL	.63	.18	2.03	6.24	2.64	3.48	1.42	1.33	5.28	3.39	.23	.99
STA. AV.												

NOTES

YEARLY PRECIPITATION 27.84 INCHES. PRECIPITATION VALUES ARE A THIENSEN WEIGHTED AVERAGE OF 9 GAGES ON THE WATERSHED. FIRST YEAR OF RECORD THEREFORE STA. AV. SHOWN.

1967 MEAN DAILY DISCHARGE (cfs)						CHICKASHA, OKLAHOMA WATERSHED 311 NEAR POCASSET						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.0	.0	.0	.1	1.1	.4	.1	.0	.0	.0	.2	.2
2	.0	.0	.0	.0	.9	.4	.1	.0	.1	.0	.2	.2
3	.0	.0	.0	.0	.9	.3	.1	.0	3.9	.0	.2	.1
4	.0	.0	.0	.0	.9	.3	.1	.0	1.3	.0	.2	.2
5	.0	.0	.0	.0	1.2	.3	.3	.0	5.3	.0	.1	.2
6	.0	.0	.0	.0	1.9	.3	.1	.0	1.8	.0	.1	.2
7	.0	.0	.0	.0	2.7	.3	.1	.0	.2	* 1.83	.1	.2
8	.0	.0	.0	.0	1.3	.2	.1	.0	.0	5.6	.1	.2
9	.0	.1	.0	* 3.1	1.0	.2	.0	.0	.0	.8	.2	.2
10	.0	.1	.0	* 9.0	.8	.2	.0	.0	.0	.3	.1	.2
11	.0	.1	.0	.6	.7	.2	.0	.0	.0	.2	.2	.2
12	.0	.1	.0	* 10.10	.6	.2	.0	.0	.0	.1	.1	.2
13	.0	.0	.0	6.2	.9	.2	.0	.0	.0	.1	.1	.2
14	.0	.0	.0	9.0	.5	.2	.0	.0	.0	.1	.1	.2
15	.0	.0	.0	4.8	.5	.2	.0	.0	.0	.1	.2	.2
16	.0	.0	.0	3.8	.5	.1	.0	.0	.0	.1	.2	.3
17	.0	.0	.0	4.7	.5	.1	.0	.0	.0	.1	.2	.4
18	.0	.0	.0	3.3	.5	.2	.0	.0	.0	.1	.2	.2
19	.0	.0	.0	5.1	.4	.2	.0	.0	.0	.1	.2	.2
20	.0	.0	.1	4.5	.6	.1	.0	.0	.1	.1	.2	.2
21	.0	.0	.0	2.5	.6	.1	.0	.0	2.3	.1	.2	.2
22	.0	.0	.1	1.9	.4	.1	.0	.0	.2	.1	.2	.2
23	.0	.0	.3	1.6	.4	.2	.0	.0	.0	.1	.2	.2
24	.0	.0	.3	1.4	.3	.5	.0	.0	.0	.1	.2	.2
25	.0	.0	.2	1.3	.3	3.8	.0	.0	.0	.1	.2	.2
26	.0	.1	.1	1.3	.3	3.2	.0	.0	6.9	.1	.2	.2
27	.0	.0	.1	1.3	.3	.7	.0	.0	10	.1	.2	.2
28	.0	.0	.1	1.2	.3	.2	.0	.0	.8	.1	.2	.2
29	.0		.1	1.2	.4	.1	.0	.0	.1	.1	.2	.2
30	.0		.1	1.1	.4	.1	.0	.0	.0	.1	.2	.2
31	.0		.1		.4		.0	.0		.3		.3
MEAN	.0	.0	.1	3.8	1.6	1.5	.0	.0	1.5	6.2	.2	.2
INCHES	.000	.001	.002	1.773	.079	.072	.002	.000	.070	.300	.008	.010

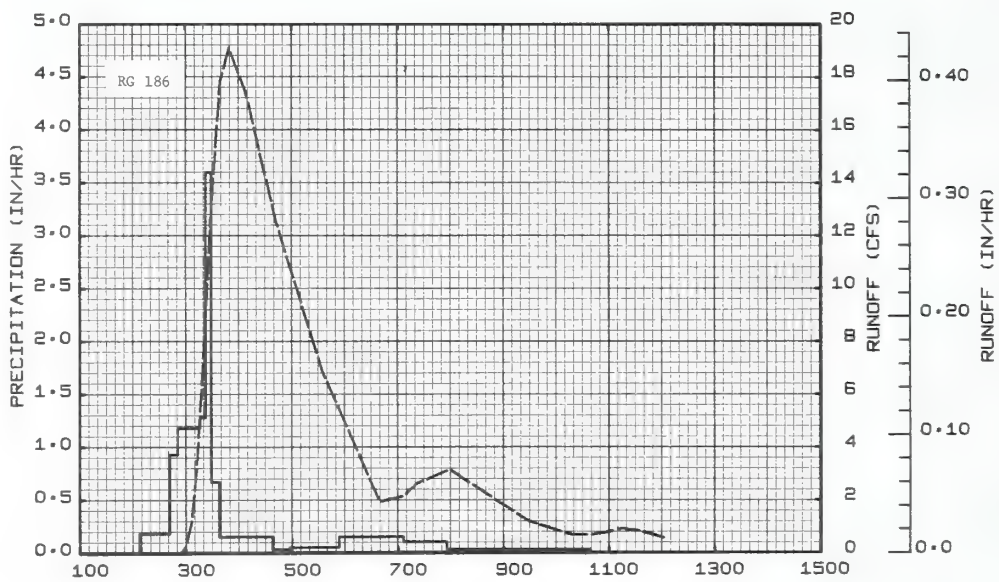
NOTES: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .001565. TO CONVERT DISCHARGE IN INCHES TO AC-FT, MULTIPLY BY 1.267. YEARLY MEAN DISCHARGE, 4.1 CFS. YEARLY DISCHARGE, 2.317 INCHES. MAXIMUM AND MINIMUM FLOWS EACH MONTH UNDERLINED. * DISCHARGE MEASUREMENTS.



MONTHLY PRECIPITATION AND RUNOFF (inches)							CHICKASHA, OKLAHOMA WATERSHED C-1 AREA - 17.8 ACRES								69.30	
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	$\frac{p_1}{q}$	.26 .000	.05 .000	2.47 .000	5.68 .068	3.11 .000	1.66 .000	2.39 .000	2.21 .000	5.16 .011	2.41 .000	.26 .000	1.10 .000	26.76 .079		
STA AVG (65-67)	$\frac{p_2}{o}$	.66 .000	.82 .000	1.61 .011	4.09 .084	2.13 .000	2.07 .002	1.82 .011	6.34 .977	3.71 .154	1.30 .000	.29 .000	.74 .000	25.58 1.239		
MEAN	$\frac{p_3}{-}$															
67 YR		1.16	1.22	1.99	3.35	4.99	3.78	2.52	2.69	3.31	2.88	1.74	1.39	31.02		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	4-12	.081	4-12	.017	4-12	.028	4-12	.042	4-12	.045	4-12	.046	4-12	.053	4-10	.058
MAXIMUMS FOR PERIOD OF RECORD																
19 65 TO	4-12	.081	8-28	.065	8-28	.128	8-28	.349	8-28	.614	8-28	.920	8-28	1.049	8-23	1.153
19 67	1967		1965		1965		1965		1965		1965		1965		1966	
NOTES: Watershed conditions: Continuous cotton - tillage during fallow period consisted of shredding stalks, disking, chiseling, spring-tooth harrowing and spike-tooth harrowing. Cotton was planted during second week of June. Tillage during the growing season consisted of rotary hoeing and cultivating. Principal drain with less than 0.05-foot grade per 100 feet was maintained during the growing season by use of field cultivator. 1/ Monthly precipitation values obtained from one recording rain gage, No. 173, located near the 1.5-foot H-flume. 2/ Precipitation and runoff records began January 1, 1965. 3/ Mean P based on 67-year (1901-67) U. S. Weather Bureau record period at Chickasha, Oklahoma. NO SELECTED RUNOFF EVENT REPORTED FOR 1967. FOR GENERAL DESCRIPTION OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1965, P. 69.30-1. MAPS - REVISED COMPOSITE, P. 69.7-21; TOPOGRAPHY, P. 69.30-3 OF FOREGOING REFERENCE.																

MONTHLY PRECIPITATION AND RUNOFF (inches)						CHICKASHA, OKLAHOMA WATERSHED C-2 AREA — 32.5 ACRES								69.31		
MONTH YEAR		JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	P 1/ Q	.42 .000	.07 .000	1.67 .000	5.41 .139	3.14 .000	2.06 .000	1.94 .000	.72 .000	5.32 .000	2.99 .025	.26 .000	.85 .000	24.85 .164		
STA AVG P 2/ (62-67) Q		.53 .000	.94 .000	1.47 .000	3.03 .034	2.76 .001	3.23 .061	1.38 .000	3.09 .004	3.58 .007	1.26 .004	1.70 .000	.80 .000	23.77 .111		
MEAN P 3/ 67 YR		1.16	1.22	1.99	3.35	4.99	3.78	2.52	2.69	3.31	2.88	1.74	1.39	31.02		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	4-12	.099	4-12	.075	4-12	.110	4-12	.139	4-12	.142	4-12	.142	4-12	.142	4-12	.142
MAXIMUMS FOR PERIOD OF RECORD																
1962 TO 1967	4-12 1967	.099	4-12 1967	.075	4-12 1967	.110	6-1 1962	.208	6-1 1962	.246	6-1 1962	.246	6-1 1962	.246	6-1 1962	.332
NOTES: Watershed conditions: This 32.5-acre watershed continued in mixed cropping. The north 15.5 acres and 0.2-acre drainage way was summer fallowed and planted to wheat in the fall of 1967. The south 16.8 acres were planted to cotton in June 1967. 1/ Monthly precipitation values obtained from one weighing type rain gage, No. 174. 2/ Precipitation and runoff records began May 1, 1962. 3/ Mean P based on 67-yr (1901-67) U. S. Weather Bureau record period at Chickasha, Oklahoma.																
NO SELECTED RUNOFF EVENT REPORTED FOR 1967. FOR GENERAL DESCRIPTION OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1965, P. 69.30-1. MAPS - REVISED COMPOSITE, P. 69.7-21; TOPOGRAPHY, P. 69.31-3 OF FOREGOING REFERENCE.																

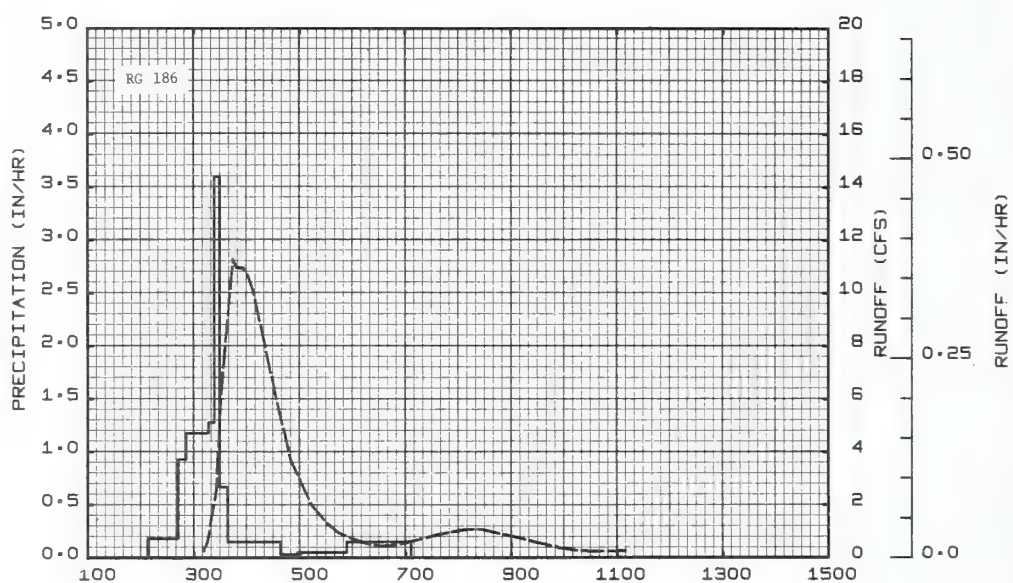
MONTHLY PRECIPITATION AND RUNOFF (inches)							CHICKASHA, OKLAHOMA				WATERSHED C-3				69.32	
							AREA - 44.3 ACRES									
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	P 1/	.24	.04	2.52	5.45	3.18	1.55	2.42	1.83	5.12	2.01	.25	.99	25.60		
	O	.000	.000	.050	1.667	.062	.019	.164	.066	.466	.011	.000	.000	2.505		
STA AVG	P 2/	.37	.82	1.92	5.05	1.98	1.60	2.72	4.96	3.62	1.16	.34	.73	25.27		
(65-67)	O	.000	.002	.050	1.015	.031	.063	.420	1.454	.418	.004	.000	.000	3.457		
MEAN	P 3/															
67 YR		1.16	1.22	1.99	3.35	4.99	3.78	2.52	2.69	3.31	2.88	1.74	1.39	31.02		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	4-12	.428	4-12	.373	4-12	.618	4-12	.926	4-12	1.010	4-12	1.110	4-12	1.333	4-9	1.571
MAXIMUMS FOR PERIOD OF RECORD																
1965 TO	4-12	.428	4-12	.373	4-12	.618	8-29	1.029	8-29	1.093	4-12	1.110	4-12	1.333	8-21	1.768
1967	1967		1967		1967		1966		1966		1967		1967		1966	
NOTES: Watershed conditions: Cropland, previously graded and smoothed for row irrigation. Entire watershed was mold-board plowed in mid-December 1966. Preplanting tillage operations included disking 5-6 inches and spike-tooth harrowing 4 inches to incorporate herbicide, and spring-tooth harrowing. Planted cotton in May. Tillage during growing season consisted of rotary hoeing and cultivating with sweep cultivator. Irrigation water was applied four times during the period July 25 to September 1, 1967. Exact application rates varied, however were slightly less than 7.0 inches. 1/ Monthly precipitation data obtained from two recording weighing type rain gages, No. 186 and Cotton Research Station gage. 2/ Precipitation and runoff records began September 1, 1965. 3/ Mean P based on 67-year (1901-67) U. S. Weather Bureau record period at Chickasha, Oklahoma.																
1967 SELECTED RUNOFF EVENT							CHICKASHA, OKLAHOMA				WATERSHED C-3				69.32	
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
Event of April 12, 1967																
2 RG 4/			4-12	RG	186		4-12									
3-19	.21	.000		0208	.00	.00		0253	.00000	.00000						
3-22	.82	.005		0242	.18	.10		0256	.00049	.00001						
3-25	.97	.044		0251	.93	.24		0300	.00645	.00024						
3-26	.06	.001		0316	1.18	.73		0306	.02343	.00173						
3-30	.10	.000		0323	1.28	.88		0312	.06751	.00628						
3-31	.34	.000		0329	3.60	1.24		0320	.16445	.02175						
4-07	.28	.000		0338	.67	1.34		0328	.28076	.05143						
4-09	1.06	.051		0438	.15	1.49		0339	.39930	.11377						
4-10	.87	.187		0457	.03	1.50		0349	.42821	.18273						
4-11	.00	T		0553	.05	1.55		0408	.38989	.31226						
				0706	.15	1.73		0442	.28076	.50228						
				0755	.10	1.81		0534	.15385	.69062						
				1039	.01	1.86		0639	.04306	.79728						
								0706	.04790	.81775						
								0721	.05859	.83106						
								0759	.07065	.87199						
								0804	.06751	.87775						
								0928	.02677	.94375						
								1018	.01502	.96117						
								1038	.01502	.96618						
Watershed conditions: 100% of watershed in cultivation. North and south portion of field in continuous irrigated cotton. Small triangular plot planted to mixture of summer row crops. Entire field spring tooth harrowed on March 29 and 30.																
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 44.671. FOR GENERAL DESCRIPTION OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1965, P. 69.32-1. MAPS - REVISED COMPOSITE, P. 69.7-21, TOPOGRAPHY, P. 69.32-3, OF FOREGOING REFERENCE. 4/ THIESSEN WEIGHTED RAINFALL USING RAIN GAGES 186 AND CRS. 5/ RUNOFF ESSENTIALLY ENDED AT 0201 ON APR. 13, 1967 WITH ACCUMULATED TOTAL OF 1.01817 INCHES WHEN NEXT EVENT BEGAN.																



APRIL 12, 1967

CHICKASHA, OKLAHOMA WATERSHED C-3

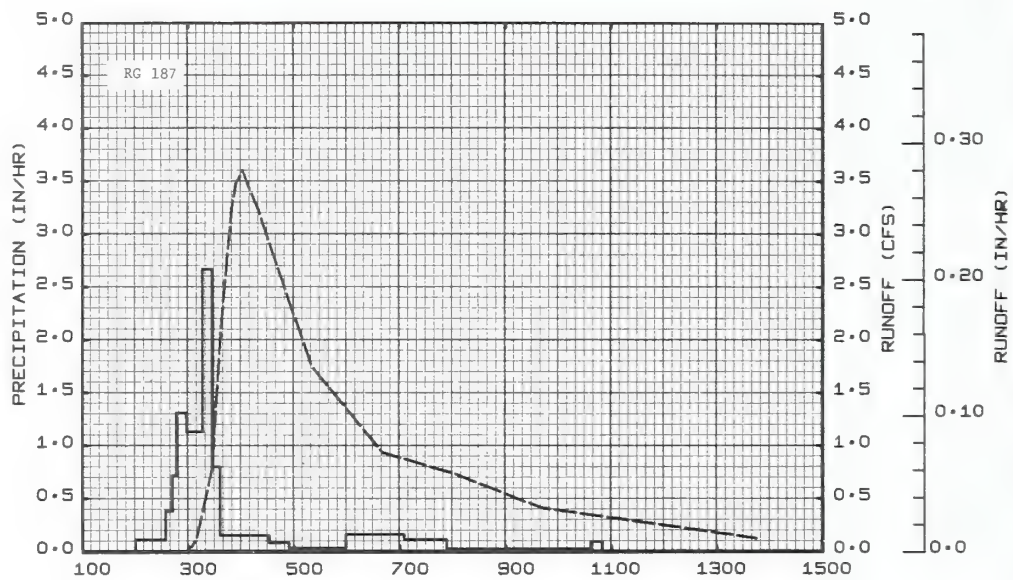
MONTHLY PRECIPITATION AND RUNOFF (inches)						CHICKASHA, OKLAHOMA WATERSHED C-4 AREA - 29.9 ACRES								69.33		
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	P 1/ O	.26 .000	.04 .000	2.53 .009	5.36 .875	3.14 .011	1.57 .000	2.39 .070	1.98 .007	4.97 .418	1.99 .000	.25 .000	1.07 .000	25.55 1.390		
STA AVG (65-67)	P 2/ O	.39 .000	.80 .003	1.92 .049	4.91 .561	1.98 .006	1.70 .023	2.82 .408	5.09 1.085	3.57 .255	1.15 .000	.30 .000	.76 .000	25.39 2.390		
MEAN 67 YR	P 3/ O	1.16	1.22	1.99	3.35	4.99	3.78	2.52	2.69	3.31	2.88	1.74	1.39	31.02		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	4-12	.374	4-12	.311	4-12	.425	4-12	.535	4-12	.574	4-12	.623	4-12	.749	4-9	.821
MAXIMUMS FOR PERIOD OF RECORD																
19 65 TO 19 67	4-12 1967	.374	4-12 1967	.311	8-29 1966	.496	8-29 1966	.813	8-29 1966	.849	8-29 1966	.856	8-29 1966	.858	8-21 1966	1.326
NOTES: Watershed conditions: Cropland, previously graded and smoothed for row irrigation. Watershed area was moldboard plowed 8-10 inches deep in mid-December 1966. Preplanting tillage included disking 3-5 inches deep, spike-tooth harrowing, use of land leveler to level and smooth area, incorporation of herbicide with disk and spring-tooth harrow, and additional spring-tooth harrowing for final seedbed preparation. Planted cotton in mid-May. Tillage during growing season consisted of rotary hoeing and cultivating with sweep type cultivator as needed. Irrigation water applied four times during the period July 25 to September 1, 1967. Application rates varied, however total quantity applied was slightly less than 7.0 inches. 1/ Monthly precipitation data obtained from Thiessen weighted rainfall values from two recording weighing type rain gages, Nos. 186 and 187. 2/ Precipitation and runoff records began September 1, 1965. 3/ Mean P based on 67-year (1901-67) U. S. Weather Bureau record period at Chickasha, Oklahoma.																
1967 SELECTED RUNOFF EVENT						CHICKASHA, OKLAHOMA WATERSHED C-4								69.33		
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
Event of April 12, 1967																
	2 RG 4/		4-12	RG	186		4-12	0303	.00000	.00000						
3-19	.20	.000		0208	.00	.00		0307	.00076	.00002						
3-22	.77	.000		0242	.18	.10		0311	.00881	.00034						
3-25	1.00	.009		0251	.93	.24		0315	.01945	.00128						
3-26	.05	T		0316	1.18	.73		0325	.08533	.01001						
3-30	.11	.000		0323	1.28	.88		0330	.19764	.02181						
3-31	.38	.000		0329	3.60	1.24		0334	.25146	.03678						
4-07	.30	.000		0338	.67	1.34		0344	.37381	.08888						
4-09	1.06	.016		0438	.15	1.49		0348	.36353	.11346						
4-10	.86	.056		0457	.03	1.50		0351	.36353	.13164						
				0553	.05	1.55		0355	.36353	.15587						
				0706	.15	1.73		0401	.35293	.19170						
				0755	.10	1.81		0407	.33305	.22600						
				1039	.01	1.86		0432	.20483	.33806						
Watershed conditions: 100% of watershed in cultivation, continuous irrigated cotton. Entire watershed received normal tillage of disking and spring tooth harrowing. Entire watershed spring tooth harrowed 4" deep on April 6.																
								0449	.12331	.38454						
								0513	.06584	.42237						
								0530	.04367	.43789						
								0544	.03115	.44662						
								0601	.02297	.45429						
								0620	.01630	.46051						
								0632	.01484	.46363						
								0652	.01630	.46882						
								0737	.02896	.48579						
								0811	.03585	.50416						
								0826	.03585	.51312						
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 30.150. FOR GENERAL DESCRIPTION OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1965, P. 69.33-1. MAPS - REVISED COMPOSITE, P. 69.7-21; TOPOGRAPHY, P. 69.33-3 OF FOREGOING REFERENCE. 4/ THIESSEN WEIGHTED RAINFALL USING RAIN GAGES 186 AND 187. 5/ RUNOFF ENDED AT 0202 ON APR. 13, 1967 WITH AN ACCUMULATED TOTAL OF 0.57481 INCHES.																



APRIL 12 1967

CHICKASHA, OKLAHOMA WATERSHED C-4

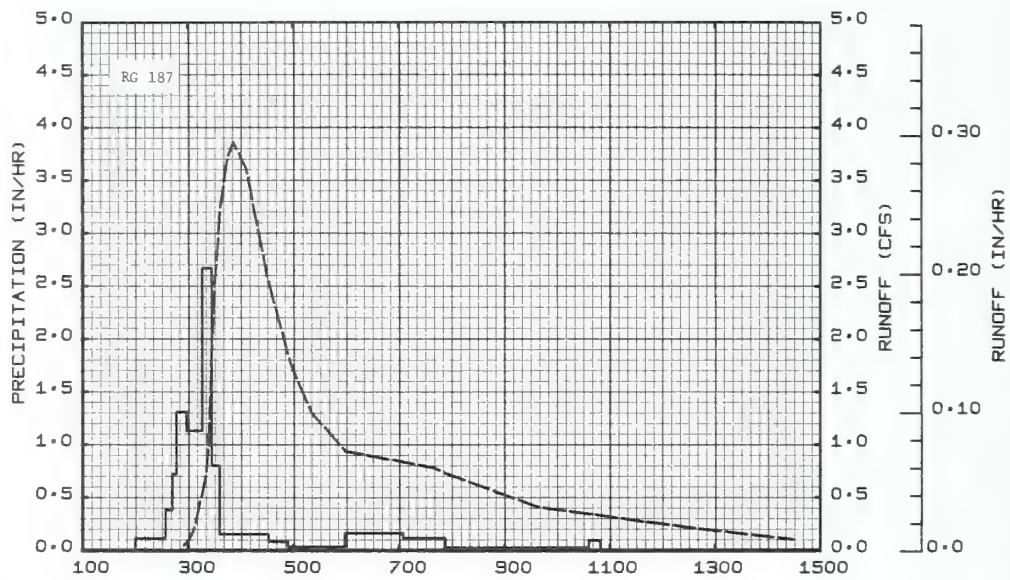
MONTHLY PRECIPITATION AND RUNOFF (inches)						CHICKASHA, OKLAHOMA WATERSHED C-5 AREA - 12.8 ACRES								69.34		
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	P 1/ Q	.26 .000	.04 .000	2.43 .093	5.25 1.205	3.19 .000	1.60 .000	2.26 .000	1.80 .000	4.77 .017	1.91 .000	.25 .000	1.04 .000	24.80 1.315		
STA AVG P 2/ (65-67) Q		.40 .000	.78 .000	1.86 .055	4.74 .624	2.23 .000	1.97 .000	2.18 .002	6.14 .135	3.54 .007	1.12 .000	.29 .000	.75 .000	26.00 .823		
MEAN P 3/ 67 YR		1.16	1.22	1.99	3.35	4.99	3.78	2.52	2.69	3.31	2.88	1.74	1.39	31.02		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	4-12	.280	4-12	.250	4-12	.409	4-12	.673	4-12	.775	4-12	.812	4-12	.935	4-9	1.180
MAXIMUMS FOR PERIOD OF RECORD																
19 65 TO	4-12	.280	4-12	.250	4-12	.409	4-12	.673	4-12	.775	4-12	.812	4-12	.935	4-9	1.180
19 67	1967	1967	1967	1967	1967	1967	1967	1967	1967	1967	1967	1967	1967	1967	1967	1967
NOTES: Watershed conditions: Watershed planted to wheat in fall of 1966 and harvested for grain in June 1967. During the summer of 1967 the watershed was tandem disked 4-6 inches deep and chiseled 8 inches deep soon after harvest. The watershed was disked 6-8 inches deep with one-way disk on July 12 and August 2, and spring-tooth harrowed 4 inches deep on August 23 and September 13 and 3 inches deep on October 4. Watershed was spike-tooth harrowed on October 6 and October 10. Watershed was planted to wheat October 11, 1967. 1/ Monthly precipitation data obtained from Thiessen weighted rainfall values from two weighing recording type rain gages, Nos. 185 and 187. 2/ Precipitation and runoff records began May 1, 1965. 3/ Mean P based on 67-year (1901-67) U. S. Weather Bureau record period at Chickasha, Oklahoma.																
1967 SELECTED RUNOFF EVENT						CHICKASHA, OKLAHOMA				WATERSHED C-5				69.34		
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
	2 RG 4/			Event of April 12, 1967												
3-19	.19	.000	4-12	RG	187		4-12									
3-22	.75	.000		0200	.00	.00		0300	.00000	.00000						
3-25	.96	.093		0234	.11	.06		0305	.00412	.00017						
3-26	.04	.000		0242	.38	.11		0309	.00940	.00062						
3-30	.11	.000		0247	.72	.17		0327	.06066	.01113						
				0258	1.31	.41		0337	.16281	.02975						
3-31	.36	.000		0316	1.13	.75		0349	.25176	.07121						
4-07	.29	.000		0327	2.67	1.24		0354	.27050	.09297						
4-09	1.04	.035		0336	.80	1.36		0402	.28022	.12969						
4-10	.84	.210		0432	.15	1.50		0407	.27050	.15263						
				0454	.08	1.53		0419	.25176	.20486						
Watershed conditions: 100% of watershed planted to wheat in fall of 1966. Normal growth during spring.				0559	.03	1.56		0520	.13614	.40205						
				0705	.16	1.73		0640	.07285	.54139						
				0753	.11	1.82		0802	.05689	.63005						
				1036	.02	1.87		0940	.03188	.70255						
				1049	.09	1.89		1345	.00940	5/.78685						
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 12.907. FOR GENERAL DESCRIPTION OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1965, P. 69.34-1. MAPS - REVISED COMPOSITE P. 69.7-21; TOPOGRAPHY, P. 69.34-3 OF FOREGOING REFERENCE. 4/ THIESSEN WEIGHTED RAINFALL USING RAIN GAGES 185 AND 187. 5/ RUNOFF ESSENTIALLY ENDED AT 0203 ON APR. 13, 1967 WITH ACCUMULATED TOTAL OF 0.80209 INCHES WHEN NEXT EVENT BEGAN.																



APRIL 12, 1967

CHICKASHA, OKLAHOMA WATERSHED C-5

MONTHLY PRECIPITATION AND RUNOFF (inches)						CHICKASHA, OKLAHOMA AREA - 13.0 ACRES								WATERSHED C-6 69.35		
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967	.26 0	.04 .000	2.41 .106	5.23 1.058	3.20 .000	1.60 .000	2.24 .000	1.77 .000	4.74 .029	1.88 .000	.25 .000	1.04 .000	24.66 1.193			
STA AVG (65-67)	.40 0	.78 .000	1.84 .085	4.77 .580	2.23 .000	1.97 .000	2.18 .003	6.13 .290	3.54 .028	1.11 .000	.29 .000	.75 .000	25.99 .986			
MEAN 67 YR	1.16 3/	1.22	1.99	3.35	4.99	3.78	2.52	2.69	3.31	2.88	1.74	1.39	31.07			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		3 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	4-12	.295	4-12	.259	4-12	.398	4-12	.634	4-12	.744	4-12	.787	4-12	.895	4-9	1.050
MAXIMUS FOR PERIOD OF RECORD																
1965 TO 1967	8-28 1965	.305	4-12 1967	.259	4-12 1967	.398	4-12 1967	.634	4-12 1967	.744	4-12 1967	.787	4-12 1967	.895	4-9 1967	1.050
NOTES: Watershed conditions: Watershed planted to wheat in fall of 1966 and harvested for grain in June 1967. During the summer of 1967 the watershed was tandem disked 4-6 inches deep and chiseled 8 inches deep soon after harvest. The watershed was disked 6-8 inches deep with one-way disk on July 12 and August 2, and spring-tooth harrowed 4 inches deep on August 23 and September 13 and 3 inches deep on October 4. Watershed was spike-tooth harrowed on October 6 and October 10. Watershed was planted to wheat October 11, 1967. 1/ Monthly precipitation data obtained from Thiessen weighted rainfall values from two weighing recording type rain gages, Nos. 185 and 187. 2/ Precipitation and runoff records began May 1, 1965. 3/ Mean P based on 67-year (1901-67) U. S. Weather Bureau record period at Chickasha, Oklahoma.																
1967 SELECTED RUNOFF EVENT						CHICKASHA, OKLAHOMA		WATERSHED C-6		69.35						
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
	2 RG 4/			Event of April 12, 1967												
3-19	.19	.000	4-12	RG	187		4-12	0251	.00000	.00000						
3-22	.75	.000		0200	.00	.00		0258	.00533	.00031						
3-25	.95	.106		0234	.11	.06		0302	.00858	.00077						
3-26	.04	.000		0242	.38	.11		0306	.01326	.00150						
3-30	.11	.000		0247	.72	.17		0309	.02012	.00233						
				0258	1.31	.41										
3-31	.35	.000		0316	1.13	.75		0320	.05227	.00897						
4-07	.29	.000		0327	2.67	1.24		0323	.07147	.01206						
4-09	1.03	.018		0336	.80	1.36		0329	.17383	.02433						
4-10	.84	.138		0432	.15	1.50		0337	.24698	.05238						
				0454	.08	1.53		0346	.28459	.09225						
				0559	.03	1.56		0352	.29458	.12121						
				0705	.16	1.73		0400	.28459	.15982						
				0753	.11	1.82		0407	.27490	.19246						
				1036	.02	1.87		0431	.19649	.28674						
				1049	.05	1.88		0458	.13356	.36100						
								0521	.09954	.40568						
								0600	.07147	.46126						
								0740	.05951	.57041						
								0752	.05581	.58194						
								0937	.03128	.65815						
								1144	.02012	.71255						
								1229	.01647	.72628						
								1429	.00762	.75038						
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 13.108. FOR GENERAL DESCRIPTION OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1965, P. 69.35-1. MAPS - REVISED COMPOSITE, P. 69.7-21; TOPOGRAPHY, P. 69.34-3 OF FOREGOING REFERENCE. 4/ THIESSEN WEIGHTED RAINFALL USING RAIN GAGES 185 AND 187. 5/ RUNOFF ESSENTIALLY ENDED AT 0200 ON APR. 13, 1967 WITH ACCUMULATED TOTAL OF .76800 INCHES WHEN NEXT RUNOFF BEGAN.																

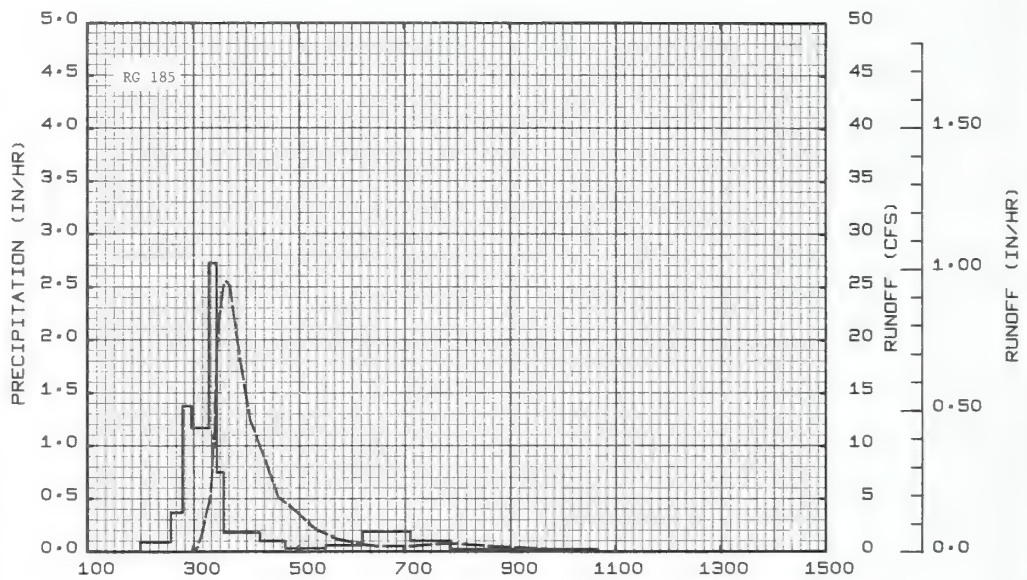


APRIL 12, 1967

CHICKASHA, OKLAHOMA WATERSHED C-6

MONTHLY PRECIPITATION AND RUNOFF (inches)							CHICKASHA, OKLAHOMA WATERSHED C-7 AREA - 26.5 ACRES							69.36			
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967	P 1	.26	.04	2.36	5.18	3.18	1.61	2.22	1.70	4.71	1.83	.26	1.03	24.38			
	Q	.000	.000	.007	1.779	.040	.002	.007	.003	.073	.000	.000	.000	1.911			
STA AVG	P 2	.40	.77	1.81	4.73	2.22	1.98	2.19	6.10	3.54	1.09	.29	.74	25.86			
(65-67)	Q	.000	.028	.004	.979	.014	.083	.174	.861	.183	.000	.000	.000	2.326			
MEAN	P 3																
67-YR		1.16	1.22	1.99	3.35	4.99	3.78	2.52	2.69	3.31	2.88	1.74	1.39	31.02			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																	
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL														
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS		
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	
1967	4-12	.957	4-12	.637	4-12	.824	4-12	.944	4-12	.969	4-12	1.050	4-10	1.228	4-9	1.634	
MAXIMUMS FOR PERIOD OF RECORD																	
1965 TO	4-12	.957	4-12	.637	4-12	.824	4-12	.944	4-12	.969	4-12	1.050	4-10	1.228	4-9	1.634	
1967	1967		1967		1967		1967		1967		1967		1967		1967		
NOTES: Watershed conditions: Cropland, normal spring tillage consisted of spike-tooth harrowing, spring-tooth harrowing, disking, spring-tooth harrowing, and spike-tooth harrowing. North field planted to cotton on June 5. South field planted to row crops, mostly grain sorghum and cotton. Some smaller plots of soy beans and alfalfa were also planted. Cotton was harvested in November. Cotton stubble was disked 4-5 inches deep followed by chiseling 8 inches deep during late December. Portion of watershed in sorghum was disked and then moldboard plowed 10-12 inches deep on October 20. 1/ Monthly precipitation data from Thiessen weighted rainfall values from two recording weighing type rain gages, Nos. 185 and 187. 2/ Precipitation and runoff records began May 1, 1965. 3/ Mean P based on 67-year (1901-67) U. S. Weather Bureau record period at Chickasha, Oklahoma.																	
1967 SELECTED RUNOFF EVENT							CHICKASHA, OKLAHOMA WATERSHED C-7										69.36
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF										
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)							
Event of April 12, 1967																	
	2 RG 4/		4-12	RG	185		4-12	0258	.00000	.00000							
3-19	.18	.000		0200	.00	.00		0300	.00123	.00002							
3-22	.75	.000		0239	.09	.05		0302	.00452	.00011							
3-25	.93	.007		0248	.37	.13		0305	.01297	.00055							
3-26	.04	.000		0258	1.38	.36		0306	.02736	.00088							
3-30	.10	.000		0318	1.17	.75											
3-31	.34	.000		0327	2.73	1.16		0309	.04880	.00279							
4-07	.29	.000		0335	.75	1.26		0311	.07169	.00480							
4-09	1.03	.099		0416	.18	1.38		0314	.11672	.00951							
4-10	.83	.336		0445	.10	1.43		0320	.19265	.02498							
				0531	.03	1.45		0322	.29382	.03309							
Watershed conditions: 100% of watershed in cultivation. Watershed spike tooth harrowed 3-4" deep on April 1 followed by use of land leveler. Watershed area was later planted to warm season row crops.																	
				0613	.06	1.49		0325	.46826	.05214							
				0707	.19	1.66		0326	.57373	.06082							
				0753	.10	1.74		0327	.69267	.07137							
				1039	.02	1.80		0330	.82507	.10932							
								0335	.94139	.18292							
								0337	.95672	.21456							
								0338	.95672	.23050							
								0342	.94139	.29377							
								0353	.69267	.44356							
								0405	.46826	.55966							
								0426	.29382	.69302							
								0437	.19265	.73762							
								0453	.15446	.78390							
								0520	.07831	.83628							
								0545	.04390	.86174							
								0618	.02235	.87996							
								0636	.01795	.88601							
								0651	.01795	.89050							
								0710	.01935	.89641							
								0742	.02736	.90886							
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 26.721. FOR GENERAL DESCRIPTION OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1965, P. 69.36-1. MAPS - REVISED COMPOSITE, P. 69.7-21; TOPOGRAPHY, P. 69.36-3 OF FOREGOING REFERENCE. 4/ THIESSEN WEIGHTED RAINFALL USING RAIN GAGES 185 AND 187. 5/ RUNOFF ENDED AT 2156 ON APR. 12, 1967 WITH ACCUMULATED TOTAL OF 0.97124 INCHES.																	

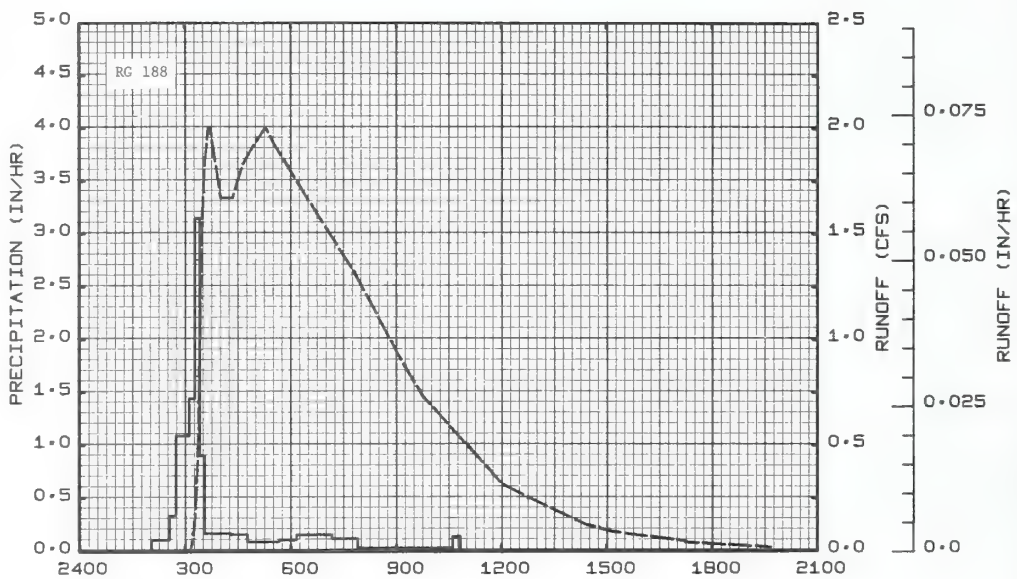
Cooperative Research Project of USDA and Oklahoma Agricultural Experiment Station



APRIL 12 1967

CHICKASHA, OKLAHOMA WATERSHED C-7

MONTHLY PRECIPITATION AND RUNOFF (inches)						CHICKASHA, OKLAHOMA AREA - 27.3 ACRES						WATERSHED C-8 69.37				
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967 P 1/	.24	.04	2.45	5.12	3.37	1.68	2.17	1.46	4.64	1.73	.24	1.05	24.19			
Q	.000	.000	.020	.505	.014	.000	.000	.000	.034	.000	.000	.000	.573			
STA AVG P 2/	.39	.78	1.81	3.72	2.31	2.01	2.21	6.02	3.54	1.06	.30	.75	24.90			
(65-67) Q	.000	.000	.031	.180	.005	.004	.126	.434	.258	.000	.000	.000	1.038			
MEAN P 3/																
67-YR	1.16	1.22	1.99	3.35	4.99	3.78	2.52	2.69	3.31	2.88	1.74	1.39	31.02			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	4-12	.073	4-12	.070	4-12	.134	4-12	.336	4-12	.414	4-12	.424	4-12	.475	4-9	.505
MAXIMUMS FOR PERIOD OF RECORD																
19 65 TO 19 67	9-19 1965	.257	9-19 1965	.190	9-19 1965	.249	8-29 1966	.374	8-29 1966	.430	8-29 1966	.436	9-19 1965	.610	8-21 1966	.678
NOTES: Watershed conditions: Cropland, watershed was drilled to alfalfa in fall of 1965 and remained in alfalfa throughout 1967. Because of poor soil moisture conditions and a heavy infestation of aphids in the spring and army worms in the fall, alfalfa was harvested only two times during 1967 (May 11 and June 10). 1/ Monthly precipitation obtained from Thiessen weighted rainfall values from two recording weighing type rain gages, Nos. 185 and 188. 2/ Precipitation and runoff records began April 1, 1965. 3/ Mean P based on 67-year (1901-67) U. S. Weather Bureau record period at Chickasha, Oklahoma.																
1967 SELECTED RUNOFF EVENT						CHICKASHA, OKLAHOMA						WATERSHED C-8		69.37		
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
Event of April 12, 1967																
	2 RG 4/		4-12	RG	1.88		4-12									
3-12	.02	.000		0203	.00	.00		0310	.000000	.000000						
3-19	.18	.000		0234	.10	.05		0312	.00119	.00001						
3-22	.73	.020		0245	.33	.11		0314	.00283	.00008						
3-25	1.02	.000		0307	1.09	.51		0316	.00439	.00020						
3-26	.03	.000		0317	1.44	.75		0319	.00959	.00055						
3-30	.08	.000		0325	3.15	1.17		0321	.01372	.00094						
3-31	.37	.000		0333	.90	1.29		0323	.02024	.00151						
4-07	.30	.000		0418	.16	1.41		0324	.02660	.00190						
4-09	1.04	.008		0446	.15	1.48		0326	.04043	.00302						
4-10	.78	.021		0540	.08	1.55		0327	.04744	.00375						
Watershed conditions: 100% of watershed in alfalfa. Severe insect infestation in March; poor growth during spring. First harvest was on May 11.																
				0610	.10	1.60		0329	.05519	.00546						
				0710	.15	1.75		0333	.06664	.00952						
				0754	.11	1.83		0337	.06970	.01406						
				1036	.02	1.89		0340	.07286	.01763						
				1050	.13	1.92		0343	.07286	.02127						
								0401	.06075	.04131						
								0421	.06075	.06157						
								0439	.06664	.08068						
								0456	.06970	.09999						
								0517	.07286	.12494						
								0533	.06970	.14395						
								0645	.05792	.22052						
								0751	.04744	.27848						
								0901	.03406	.32603						
								0945	.02660	.34827						
								1200	.01154	.39120						
								1255	.00869	.40047						
								1427	.00439	.41051						
								1510	.00323	.41325						
								1714	.00163	.41828						
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 27.528. FOR GENERAL DESCRIPTION OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1965, P. 69.37-1. MAPS - REVISED COMPOSITE, P. 69.7-21; TOPOGRAPHY, P. 69.37-5 OF FOREGOING REFERENCE. 4/ THIESSEN WEIGHTED RAINFALL USING RAIN GAGES 185 AND 188. 5/ RUNOFF ENDED AT 2359 ON APR. 12, 1967 WITH ACCUMULATED TOTAL OF 0.44217 INCHES.																



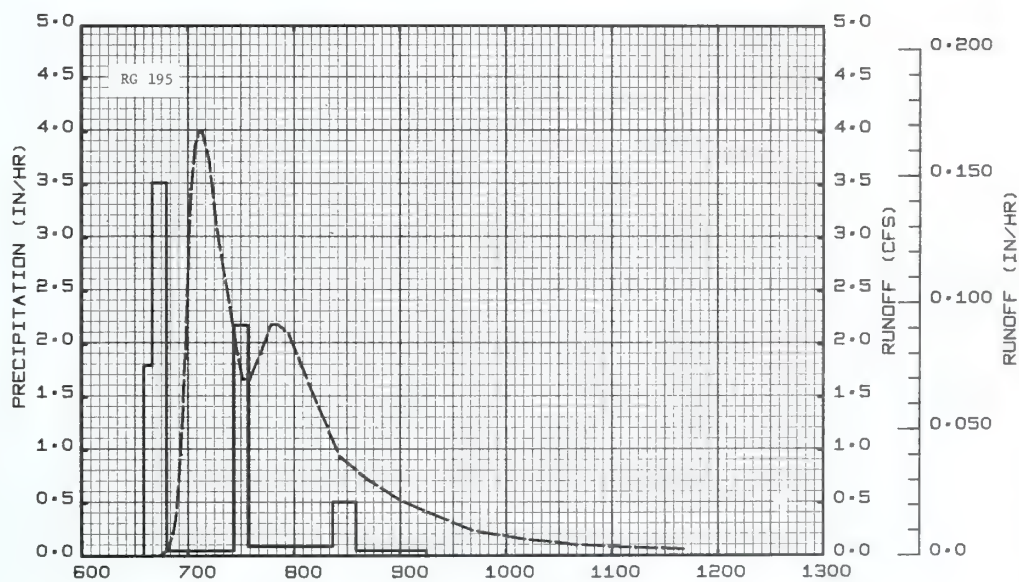
APRIL 12, 1967

CHICKASHA, OKLAHOMA WATERSHED C-8

MONTHLY PRECIPITATION AND RUNOFF (inches)							CHICKASHA, OKLAHOMA				WATERSHED R-1				69.38
							AREA - 17.8 ACRES								
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967 P 1/	.75	.13	1.92	6.33	2.71	4.00	1.75	1.51	8.46	3.05	.21	1.10	31.92		
Q	.0000	.0000	.0004	.0723	.0004	.0023	.0000	.0000	.0181	.0038	.0000	.0000	.0973		
STA AVG P 2/	.51	.86	1.30	3.55	2.65	4.58	1.03	3.62	4.08	1.46	1.67	.78	26.08		
(62-67) Q	.0000	.0001	.0002	.0262	.0077	.0042	.0000	.0069	.0069	.0011	.0027	.0004	.0564		
MEAN P 3/															
67 YR	1.16	1.22	1.99	3.35	4.99	3.78	2.52	2.69	3.31	2.88	1.74	1.39	31.02		
Notes: Watershed conditions: Watershed is in range and pasture grasses and within the same fence enclosure as Watersheds R-2, R-3, and R-4. All have essentially the same grazing management. There is a good hydrologic cover of weeds, annual grasses, low order perennial grasses and some climax grass species, however, the range condition class is poor. The watershed was overgrazed throughout the year. Average from 25 uniformly spaced clipped sites in Nov. 1967 was 1,300 pounds of grass, 800 pounds of weeds, and 1,600 pounds of mulch per acre. 1/Precipitation data obtained from recording rain gage No. 189. 2/Precipitation records began Jan. 1, 1962. Runoff records began July 1, 1962. Runoff measured by stage-volume change in a farm pond. 3/Mean P based on 67-yr. (1901-67) U.S. Weather Bureau record period at Chickasha, Okla.															
Cooperative Research Project of USDA and Oklahoma Agricultural Experiment Station															
69.38-1															
MONTHLY PRECIPITATION AND RUNOFF (inches)							CHICKASHA, OKLAHOMA				WATERSHED R-2				69.39
							AREA - 24.1 ACRES								
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967 P 1/	.72	.13	1.72	6.22	2.46	4.05	1.79	1.55	8.22	2.92	.17	1.02	30.97		
Q	.0000	.0000	.0009	.2111	.0080	.0286	.0000	.0000	.1509	.0381	.0000	.0000	.4376		
STA AVG P 2/	.50	.84	1.27	3.53	2.61	4.55	1.03	3.54	4.02	1.44	1.66	.77	25.76		
(62-67) Q	.0000	.0003	.0019	.0750	.0125	.0333	.0002	.0421	.0452	.0097	.0123	.0048	.2373		
MEAN P 3/															
67 YR	1.16	1.22	1.99	3.35	4.99	3.78	2.52	2.69	3.31	2.88	1.74	1.39	31.02		
Notes: Watershed conditions: Watershed is in range and pasture grasses and within the same fence enclosure as Watersheds R-1, R-3, and R-4. All have essentially the same grazing management. There is a good hydrologic cover of weeds, annual grasses, low order perennial grasses and some climax grass species, however, the range condition class is poor. The watershed was overgrazed throughout the year. Average from 25 uniformly spaced clipped sites in Nov. 1967 was 1,800 pounds of grass, 800 pounds of weeds and 2,000 pounds of mulch per acre. 1/Precipitation data obtained from recording rain gage No. 190. 2/Precipitation records began Jan. 1, 1962. Runoff records began July 1, 1962. Runoff measured by stage-volume change in a farm pond. 3/Mean P based on 67-yr. (1901-67) U.S. Weather Bureau record period at Chickasha, Okla.															
Cooperative research Project of USDA and Oklahoma Agricultural Experiment Station															
69.39-1															
MONTHLY PRECIPITATION AND RUNOFF (inches)							CHICKASHA, OKLAHOMA				WATERSHED R-3				69.40
							AREA - 25.8 ACRES								
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967 P 1/	.65	.14	1.58	6.09	2.54	4.02	1.83	1.40	7.99	2.82	.19	1.04	30.29		
Q	.0010	.0000	.0014	.0888	.0033	.0093	.0000	.0000	.0445	.0150	.0000	.0000	.1633		
STA AVG P 2/	.49	.84	1.26	3.50	2.63	4.52	1.04	3.52	3.96	1.42	1.66	.77	25.61		
(62-67) Q	.0003	.0003	.0011	.0343	.0066	.0131	.0000	.0195	.0221	.0043	.0066	.0012	.1094		
MEAN P 3/															
67 YR	1.16	1.22	1.99	3.35	4.99	3.78	2.52	2.69	3.31	2.88	1.74	1.39	31.02		
Notes: Watershed conditions: Watershed is in range and pasture grasses and within the same fence enclosure as Watersheds R-1, R-2, and R-4. All have essentially the same grazing management. There is a good hydrologic cover of weeds, annual grasses, low order perennial grasses and some climax grass species, however, the range condition class is poor. The watershed was overgrazed throughout the year. Average from 25 uniformly spaced clipped sites in Nov. 1967 was 1,600 pounds of grass, 500 pounds of weeds, and 2,000 pounds of mulch per acre. 1/Precipitation data obtained from recording rain gage No. 191. 2/Precipitation records began Jan. 1, 1962. Runoff records began July 1, 1962. Runoff measured by stage-volume change in a farm pond. 3/Mean P based on 67-yr. (1901-67) U.S. Weather Bureau record period at Chickasha, Okla.															
Cooperative Research Project of USDA and Oklahoma Agricultural Experiment Station															
69.40-1															
MONTHLY PRECIPITATION AND RUNOFF (inches)							CHICKASHA, OKLAHOMA				WATERSHED R-4				69.41
							AREA - 18.1 ACRES								
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967 P 1/	.73	.16	1.77	6.35	2.66	4.19	1.80	1.58	8.07	3.47	.22	1.05	32.05		
Q	.0000	.0000	.0008	.3049	.0001	.0082	.0000	.0000	.0908	.0183	.0000	.0000	.4231		
STA AVG P 2/	.51	.83	1.28	3.55	2.65	4.62	1.03	3.60	4.02	1.52	1.67	.77	26.05		
(62-67) Q	.0000	.0000	.0006	.1082	.0045	.0266	.0000	.0307	.0269	.0044	.0051	.0002	.2072		
MEAN P 3/															
67 YR	1.16	1.22	1.99	3.35	4.99	3.78	2.52	2.69	3.31	2.88	1.74	1.39	31.02		
Notes: Watershed conditions: Watershed is in range and pasture grasses and within the same fence enclosure as Watersheds R-1, R-2, and R-3. All have essentially the same grazing management. There is a good hydrologic cover of weeds, annual grasses, low order perennial grasses and some climax grass species, however, the range condition class is poor. The watershed was overgrazed throughout the year. Average from 25 uniformly spaced clipped sites in Nov. 1967 was 1,600 pounds of grass, 500 pounds of weeds, and 1,500 pounds of mulch per acre. 1/Precipitation data obtained from recording rain gage No.192. 2/Precipitation records began Jan.1, 1962. Runoff records began July 1, 1962. Runoff measured by stage-volume change in a farm pond. 3/Mean P based on 67-yr.(1901-67) U.S. Weather Bureau record period at Chickasha, Okla.															
NO SELECTED RUNOFF EVENTS REPORTED FOR R-1, R-2, R-3, AND R-4 FOR 1967. FOR GENERAL DESCRIPTIONS OF THE WATERSHEDS, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1965, P. 69.38-2 (R-1); P. 69.39-1, (R-2); P. 69-40-1 (R-3); P. 69.41-1 (R-4). MAPS - REVISED COMPOSITE, P. 69.7-21; TOPOGRAPHY, P. 69.38-2 (R-1); P. 69.39-2 (R-2 AND R-3); P. 69.41-2 OF FOREGOING REFERENCE															
Cooperative Research Project of USDA and Oklahoma Agricultural Experiment Station															
(See 69.38-1;-39-1;-40-1 above)															
69.41-1															

MONTHLY PRECIPITATION AND RUNOFF (inches)						CHICKASHA, OKLAHOMA AREA - 23.7 ACRES						WATERSHED R-5		69.42		
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967 P 1/ O	.08 .000	.10 .000	2.34 .000	6.62 1.074	4.54 .045	2.07 .000	1.57 .000	1.20 .000	5.65 .000	2.51 .000	.26 .000	1.04 .000	27.98 1.119			
STA AVG P 2/ (66-67) O							2.46 .070	3.64 .000	3.94 .000	1.48 .000	.49 .000	.70 .000				
MEAN P 3/																
67 YR	1.16	1.22	1.99	3.35	4.99	3.78	2.52	2.69	3.31	2.88	1.74	1.39	31.02			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	4-12	.879	4-12	.577	4-12	.721	4-12	.790	4-12	.806	4-12	.810	4-10	.947	4-9	1.066
MAXIMUMS FOR PERIOD OF RECORD																
19 66 TO 1967	4-12 1967	.879	4-12 1967	.577	4-12 1967	.721	4-12 1967	.790	4-12 1967	.806	4-12 1967	.810	4-10	.947	4-9	1.066
NOTES Watershed conditions: Native grass rangeland, continuously grazed by beef cattle during recent years. Range condition class during 1967 was good, however, entire area was slightly overgrazed throughout the year. The vegetative cover in November 1967, based on 25 clipped samples uniformly spaced, averaged 2,200 pounds per acre of standing vegetation and 2,800 pounds per acre of mulch. This watershed was within the same pasture area as Watershed R-6, however was subjected to a slightly heavier grazing rate. 1/ Monthly precipitation obtained from Thiessen weighted rainfall values from two gages, Nos. 195 and 196. 2/ Precipitation and runoff records began July 1, 1966. 3/ Mean P based on 67-year (1901-67) U. S. Weather Bureau record period at Chickasha, Oklahoma.																
1967 SELECTED RUNOFF EVENT						CHICKASHA, OKLAHOMA						WATERSHED R-5		69.42		
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
				Event of April 10, 1967												
	2 RG 4/			RG	195											
3-19	.25	.000	4-10	0635	.00	.00	4-10	0638	.0000	.0000						
3-22	.87	.000		0640	1.80	.15		0643	.0000	.0000						
3-25	.44	.000		0648	3.52	.62		0645	.0001	.0000						
3-26	.08	.000		0726	.05	.65		0649	.0024	.0001						
3-30	.20	.000		0734	2.18	.94		0651	.0073	.0002						
				0822	.09	1.01		0653	.0144	.0006						
3-31	.53	.000		0835	.51	1.12		0655	.0304	.0014						
4-07	.44	.000		0915	.75	1.15		0657	.0542	.0028						
4-09	1.09	.009						0659	.0868	.0051						
4-10	.00	5/.003						0701	.1294	.0087						
Watershed conditions: 100% of watershed in virgin native grassland. Continuous grazing slightly in excess of optimum. In same fence enclosure with Watershed R-6.																
								0702	.1442	.0110						
								0704	.1600	.0161						
								0706	.1655	.0215						
								0708	.1655	.0270						
								0712	.1546	.0377						
								0716	.1294	.0472						
								0728	.0796	.0680						
								0731	.0694	.0718						
								0733	.0694	.0741						
								0735	.0694	.0764						
								0741	.0796	.0838						
								0747	.0906	.0923						
								0751	.0906	.0984						
								0757	.0868	.1073						
								0811	.0630	.1247						
								0826	.0389	.1375						
								0841	.0304	.1462						
								0901	.0215	.1548						
								0941	.0100	.1653						
								1011	.0065	6/.1694						
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 23.988. FOR GENERAL DESCRIPTION OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1966, P. 69.42-1. MAPS - TOPOGRAPHY, P. 69.42-3 OF FOREGOING REFERENCE; REVISED COMPOSITE, P. 69.7-21 (1965 PUBLICATION). 4/ THIESSEN WEIGHTED RAINFALL USING RAIN GAGES 195 AND 196. 5/ RUNOFF PRIOR TO 0635. 6/ RUNOFF ENDED AT 0310 ON APR. 11, 1967 WITH ACCUMULATED TOTAL OF 0.1804 INCHES.																

Cooperative Research Project of USDA and Oklahoma Agricultural Experiment Station



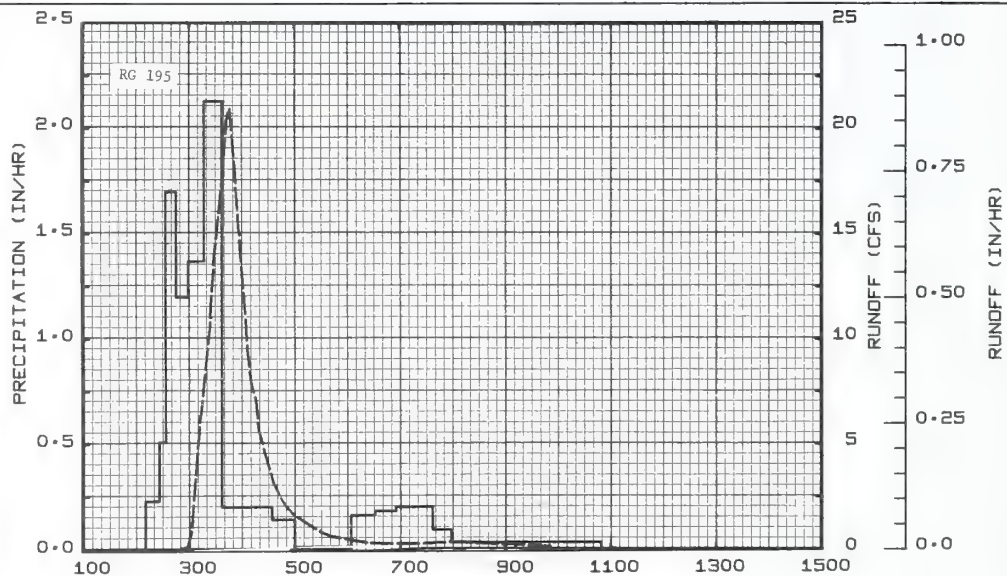
APRIL 10, 1967

CHICKASHA, OKLAHOMA WATERSHED R-5

1967 SELECTED RUNOFF EVENTS			CHICKASHA, OKLAHOMA				WATERSHED R-5				69.42
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF 1/				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)	
Event of April 12, 1967											
	2 RG 2/		4-12	RG	195		4-12	0247	.0000	.0000	
3-19	.19	.000		0210	.00	.00		0255	.0024	.0001	
3-22	.87	.000		0226	.23	.06		0302	.0304	.0014	
3-25	.44	.000		0233	.51	.12		0309	.1827	.0128	
3-26	.08	.000		0245	1.70	.46		0317	.3251	.0477	
3-30	.20	.000		0259	1.20	.74					
3-31	.53	.000		0317	1.37	1.15		0321	.3966	.0718	
4-07	.44	.000		0337	2.13	1.86		0324	.4457	.0928	
4-09	1.09	.009		0434	.20	2.05		0325	.4984	.1007	
4-10	1.16	.190		0500	.14	2.11		0329	.5904	.1370	
				0604	.01	2.12		0338	.7467	.2364	
Watershed conditions: 100% of watershed in virgin native grassland. Continuous grazing slightly in excess of optimum. In same fence enclosure with Watershed R-6.				0631	.16	2.19		0343	.8634	.3042	
				0655	.18	2.26		0346	.8788	.3478	
				0737	.20	2.40		0347	.8634	.3623	
				0758	.09	2.43		0352	.7467	.4298	
				1049	.03	2.50		0356	.6401	.4760	
								0400	.5431	.5155	
								0404	.4562	.5488	
								0406	.3966	.5630	
								0411	.3251	.5935	
								0416	.2925	.6193	
								0419	.2337	.6324	
								0436	.1294	.6827	
								0449	.0868	.7061	
								0458	.0694	.7178	
								0526	.0367	.7423	
								0541	.0249	.7500	
								0628	.0110	.7630	
								0710	.0100	.7710	
								0729	.0110	3/7734	

Watershed conditions: 100% of watershed in virgin native grassland. Continuous grazing slightly in excess of optimum. In same fence enclosure with Watershed R-6.

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 23.898. 1/ SOME INTERMEDIATE BREAK POINTS HAVE BEEN REMOVED TO SHORTEN THE LISTING. 2/ THIESSEN WEIGHTED RAINFALL USING RAIN GAGES 195 AND 196. 3/ RUNOFF ENDED AT 0038 ON APR. 13, 1967 WITH ACCUMULATED TOTAL OF .8089 INCHES.

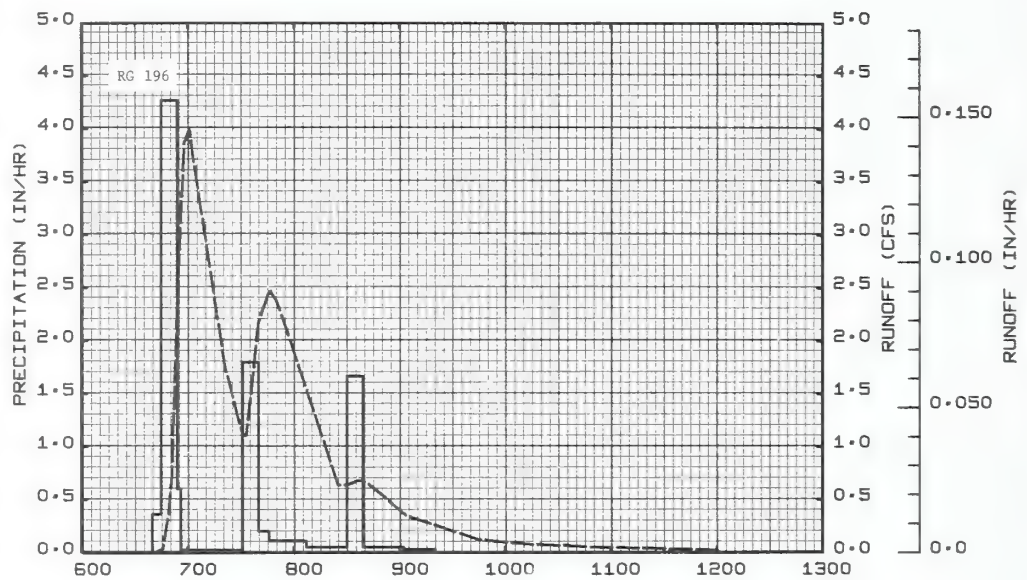


APRIL 12, 1967

CHICKASHA, OKLAHOMA WATERSHED R-5

MONTHLY PRECIPITATION AND RUNOFF (inches)							CHICKASHA, OKLAHOMA WATERSHED R-6 AREA - 27.2 ACRES							69.43		
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967 P 1/ Q	.08 .000	.10 .000	2.20 .000	6.52 1.103	4.73 .070	2.08 .000	1.48 .000	1.22 .000	5.66 .030	2.59 .000	.24 .000	1.04 .000	27.94 1.203			
STA AVG P 2/ (66-67) S							2.46 .060	3.68 .018	3.90 .016	1.50 .000	.48 .000	.70 .000				
MEAN P 3/ 67 YR	1.16	1.22	1.99	3.35	4.99	3.78	2.52	2.69	3.31	2.88	1.74	1.39	31.02			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	4-12	1.066	4-12	.658	4-12	.808	4-12	.879	4-12	.889	4-12	.892	4-11	.989	4-10	1.098
MAXIMUMS FOR PERIOD OF RECORD																
19 66 TO	4-12	1.066	4-12	.658	4-12	.808	4-12	.879	4-12	.889	4-12	.892	4-11	.989	4-10	1.098
19 67	1967		1967		1967		1967		1967		1967		1967			
NOTES: Watershed conditions: Native grass rangeland, continuously grazed by beef cattle during recent years. Range condition class during 1967 was good, however 75 percent of the area was slightly overgrazed throughout the year. The vegetative cover in November 1967, based on 25 clipped samples uniformly spaced, averaged 2,900 pounds per acre of standing vegetation and 2,500 pounds per acre of mulch. The watershed was within the same pasture area as Watershed R-5, however was subjected to a slightly lighter grazing rate. 1/ Monthly precipitation obtained from Thiessen weighted rainfall values from two gages, Nos. 196 and 197. 2/ Precipitation and runoff records began July 1, 1966. 3/ Mean P based on 67-year (1901-67) U. S. Weather Bureau record period at Chickasha, Oklahoma.																
1967 SELECTED RUNOFF EVENTS							CHICKASHA, OKLAHOMA WATERSHED R-6							69.43		
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF 4/									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
				Event of April 10, 1967												
	2 RG 5/															
3-19	.18	.000	4-10	RG	196		4-10	0642	.0000	.0000						
3-22	.81	.000		0640	.36	.03		0646	.0007	.0000						
3-25	.43	.000		0654	4.27	.67		0649	.0125	.0002						
3-26	.08	.000		0656	.60	.69		0651	.0263	.0009						
3-30	.18	.000		0731	.02	.70		0652	.0469	.0015						
3-31	.49	.000		0740	1.80	.97		0654	.0819	.0037						
4-07	.46	.000		0746	.20	.99		0656	.1120	.0070						
4-09	1.10	.026		0807	.11	1.03		0658	.1386	.0112						
4-10	.00	.001		0830	.05	1.05		0701	.1434	.0183						
				0839	1.67	1.15		0703	.1339	.0229						
				0902	.05	1.17		0721	.0629	.0521						
				0920	.03	1.18		0731	.0400	.0605						
								0733	.0400	.0618						
								0740	.0785	.0688						
								0746	.0889	.0772						
								0750	.0853	.0830						
								0756	.0752	.0910						
								0825	.0231	.1133						
								0828	.0231	.1144						
								0830	.0231	.1152						
								0836	.0247	.1176						
								0838	.0247	.1184						
								0843	.0231	.1204						
								0904	.0125	.1267						
								0945	.0044	.1323						
								1013	.0024	.1339						
								1059	.0012	.1351						
								1200	.0004	.1358						
Watershed conditions: 100% of watershed in virgin native grassland. Continuous grazing slightly in excess of optimum. In same fence enclosure with Watershed R-5.																
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 27.427. FOR GENERAL DESCRIPTION OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1966, P. 69.43-1. MAPS - TOPOGRAPHY, P. 69.42-3 OF FOREGOING REFERENCE; REVISED COMPOSITE, P. 69.7-21 (1965 PUBLICATION). 4/ SOME INTERMEDIATE BREAK POINTS HAVE BEEN REMOVED TO SHORTEN THE LISTING. 5/ THIESSEN WEIGHTED RAINFALL USING GAGES 196 AND 197. 6/ RUNOFF PRIOR TO 0640. 7/ RUNOFF ENDED AT 2045 ON APR. 10, 1967 WITH ACCUMULATED TOTAL OF 0.1365 INCHES.																

Cooperative Research Project of USDA and Oklahoma Agricultural Experiment Station



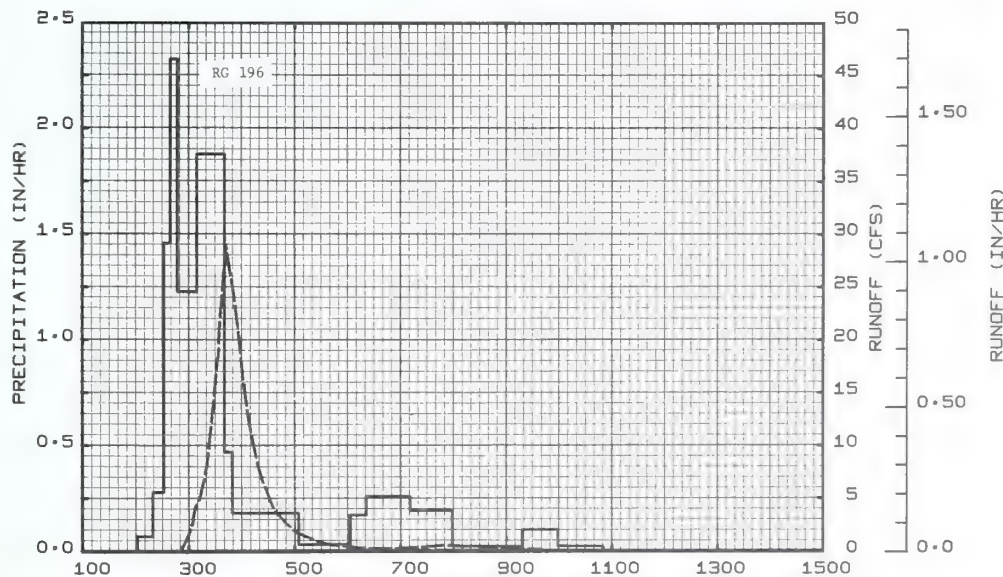
APRIL 10, 1967

CHICKASHA, OKLAHOMA WATERSHED R-6

1967 SELECTED RUNOFF EVENTS			CHICKASHA, OKLAHOMA				WATERSHED R=6				69.43
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF ^{1/}				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)	
			Event of April 12, 1967								
2 RG ^{2/}			4-12	RG	196		4-12				
3-19	.18	.000		0202	.00	.00		0245	.0000	.0000	
3-22	.81	.000		0219	.07	.02		0250	.0038	.0001	
3-25	.43	.000		0232	.28	.08		0254	.0200	.0008	
3-26	.08	.000		0239	1.46	.25		0300	.0573	.0046	
3-30	.18	.000		0247	2.33	.56		0305	.1120	.0112	
3-31	.49	.000		0309	1.23	1.01		0313	.1908	.0323	
4-07	.46	.000		0340	1.88	1.98		0320	.2819	.0599	
4-09	1.10	.026		0349	.47	2.05		0327	.7388	.1127	
4-10	1.13	.142		0504	.18	2.27		0332	.6496	.1705	
				0603	.03	2.30		0333	.6743	.1816	
Watershed conditions: 100% of watershed in virgin native grassland. Continuous grazing slightly in excess of optimum. In same fence enclosure with Watershed R-5.				0621	.17	2.35		0335	.7928	.2060	
				0711	.26	2.57		0337	.8784	.2339	
				0759	.19	2.72		0342	1.0660	.3146	
			0918	.02	2.75	0353	.8350	.4893			
			0959	.10	2.82	0357	.7254	.5917			
			1050	.02	2.84	0400	.6255	.5755			
						0407	.4620	.6391			
						0418	.2968	.7806			
						0424	.2337	.7353			
						0436	.1434	.7725			
						0449	.0962	.7982			
						0502	.0629	.8155			
						0536	.0231	.8388			
						0627	.0078	.8502			
						0702	.0086	.8548			
						0736	.0148	.8611			
						0825	.0136	.8743			
						0940	.0038	.8839			

Watershed conditions: 100% of watershed in virgin native grassland. Continuous grazing slightly in excess of optimum. In same fence enclosure with Watershed R=5.

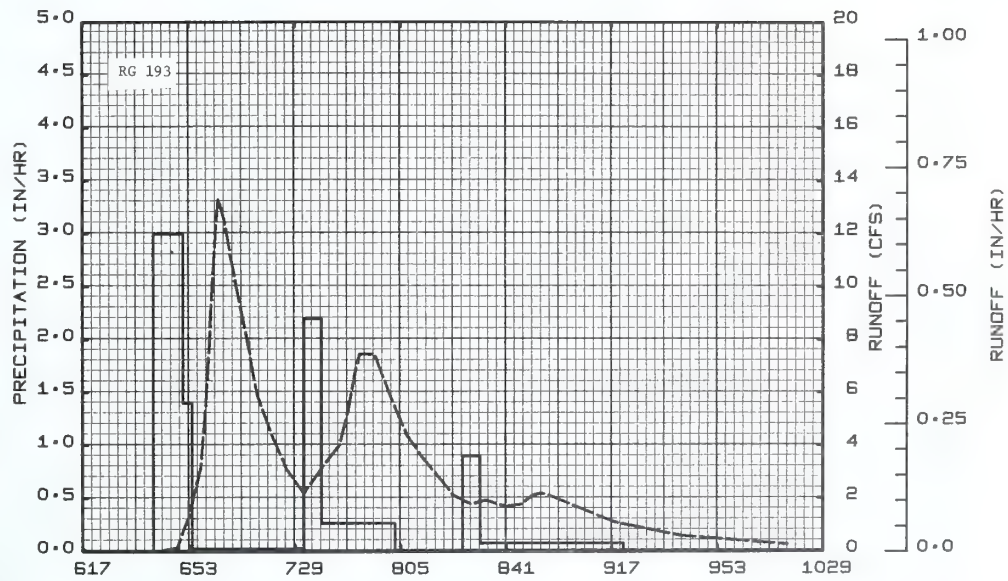
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 27.427. 1/ SOME INTERMEDIATE BREAK POINTS HAVE BEEN REMOVED TO SHORTEN THE LISTING. 2/ THIESSEN WEIGHTED RAINFALL USING RAIN GAGES 196 AND 197. 3/ RUNOFF ENDED AT 2230 ON APR. 12, 1967 WITH ACCUMULATED TOTAL OF .8893 INCHES.



APRIL 12, 1967

CHICKASHA, OKLAHOMA WATERSHED R=6

MONTHLY PRECIPITATION AND RUNOFF (inches)							CHICKASHA, OKLAHOMA				WATERSHED R-7				69.44		
							AREA - 19.2 ACRES										
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967	P ¹ / _o	.08	.08	2.33	6.14	4.51	1.89	1.56	1.11	5.85	2.18	.27	1.01	27.01			
		.000	.000	.000	2.310	.666	.031	.006	.000	.713	.046	.000	.000	3.772			
STA AVG	P ² / _o							2.37	3.83	3.72	1.30	.50	.68				
(66-67)								.270	.308	.384	.023	.000	.000				
MEAN	P ³ / _o																
67 YR		1.16	1.22	1.99	3.35	4.99	3.78	2.52	2.69	3.31	2.88	1.74	1.39	31.02			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																	
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL														
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS		
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	
1967	4-12	1.512	4-12	.939	4-12	1.130	4-12	1.322	4-12	1.360	4-12	1.377	4-10	1.735	4-9	2.266	
MAXIMUMS FOR PERIOD OF RECORD																	
1966 TO	4-12	1.512	4-12	.939	4-12	1.130	4-12	1.322	4-12	1.360	4-12	1.377	4-10	1.735	4-9	2.266	
1967	1967		1967		1967		1967		1967		1967		1967		1967		
NOTES: Watershed conditions: Formerly cultivated from about 1907 until about 1935 when the land use was changed to pasture because of severe erosion. Range condition class during the year was poor. The vegetative cover in November 1967, based on 25 clipped samples uniformly spaced, averaged 1,800 pounds per acre of standing vegetation and 1,300 pounds per acre of mulch. This watershed was within the same pasture area as Watershed R-8. 1/ Monthly precipitation obtained from Thiessen weighted rainfall values from two gages, Nos. 193 and 194. 2/ Precipitation and runoff records began July 1, 1966, therefore station average for the period January through June was omitted. 3/ Mean P based on 67-year (1901-67) U. S. Weather Bureau record period at Chickasha, Oklahoma.																	
1967 SELECTED RUNOFF EVENTS							CHICKASHA, OKLAHOMA				WATERSHED R-7				69.44		
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF 4/										
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)							
Event of April 10, 1967																	
2 RG 5/			4-10	RG	193		4-10	0643	.0000	.0000							
3-19	.20	.000		0641	.00	.00		0649	.0062	.0001							
3-22	.87	.000		0651	3.00	.50		0653	.0664	.0024							
3-25	.48	.000		0654	1.40	.57		0657	.1584	.0089							
3-26	.07	.000		0732	.02	.58		0701	.5106	.0299							
3-30	.17	.000		0738	2.20	.80											
3-31	.50	.000		0803	.26	.91		0702	.6124	.0393							
4-07	.39	.000		0826	.00	.91		0703	.6822	.0501							
4-09	1.07	.187		0832	.90	1.00		0705	.6398	.0721							
4-10	.00	6/.002		0921	.07	1.06		0713	.3989	.1411							
								0716	.3036	.1587							
Watershed conditions: 100% of watershed in pasture, continuously grazed. Grass growth and ground cover considered poor. Majority of watershed formerly cultivated and severe erosion resulted.																	
								0726	.1584	.1962							
								0732	.1110	.2096							
								0741	.1829	.2324							
								0747	.2699	.2534							
								0750	.3588	.2697							
								0751	.3785	.2820							
								0801	.3036	.3357							
								0807	.2238	.3620							
								0812	.1829	.3790							
								0823	.1063	.4049							
								0829	.0889	.4145							
								0831	.0931	.4175							
								0834	.0974	.4223							
								0841	.0849	.4330							
								0846	.0889	.4401							
								0850	.1064	.4466							
								0853	.1110	.4521							
								0858	.1018	.4610							
								0917	.0565	.4856							
								0941	.0284	7/.5020							
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 19.360. FOR GENERAL DESCRIPTION OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1966, P. 69.44-1. MAPS - REVISED COMPOSITE, P. 69.7-21; TOPOGRAPHY, P. 69.44-3 OF FOREGOING REFERENCE. 4/ SOME INTERMEDIATE BREAK POINTS HAVE BEEN REMOVED TO SHORTEN THE LISTING. 5/ THIESSEN WEIGHTED RAINFALL USING RAIN GAGES 193 AND 194. 6/ RUNOFF PRIOR TO 0641. 7/ RUNOFF ENDED AT 2015 ON APR. 10, 1967 WITH ACCUMULATED TOTAL OF 0.5252 INCHES.																	

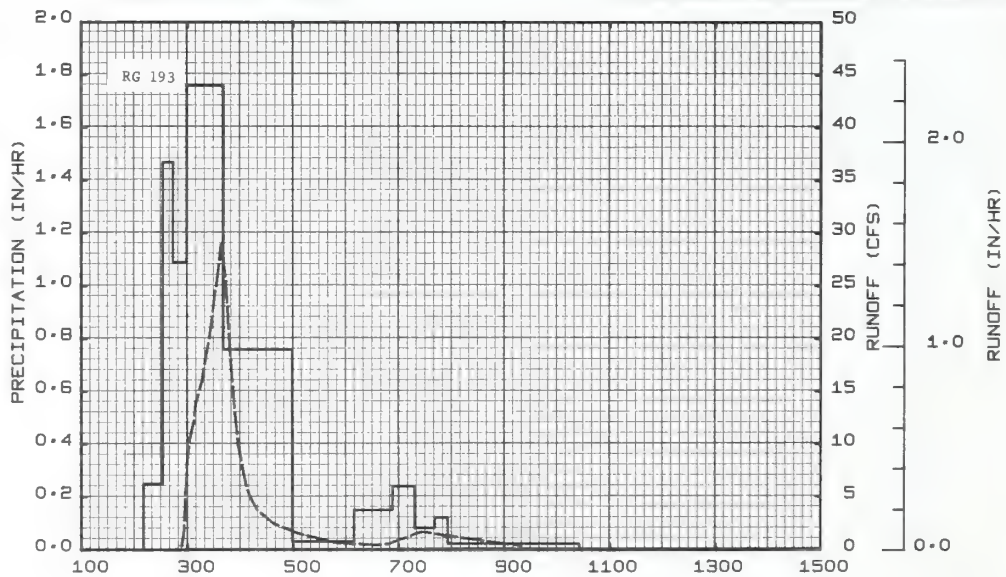


APRIL 10, 1967

CHICKASHA, OKLAHOMA WATERSHED R-7

1967 SELECTED RUNOFF EVENTS			CHICKASHA, OKLAHOMA				WATERSHED R-7				69.44
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF ^{1/}				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)	
Event of April 12, 1967											
2 RG ^{2/}			RG 193								
3-19	.20	.000	4-12	0210	.00	.00	4-12	0234	.0000	.0000	
3-22	.87	.000		0232	.25	.09		0246	.0001	.0000	
3-25	.48	.000		0243	1.47	.36		0249	.0016	.0000	
3-26	.07	.000		0259	1.09	.65		0253	.0176	.0006	
3-30	.17	.000		0340	1.76	1.85		0255	.0664	.0019	
3-31	.50	.000		0459	.76	2.09		0257	.2238	.0061	
4-07	.39	.000		0609	.03	2.13		0259	.3989	.0163	
4-09	1.07	.187		0653	.15	2.24		0303	.5473	.0487	
4-10	1.06	.539		0718	.24	2.34		0307	.6264	.0878	
				0741	.08	2.37		0316	.8196	.1995	
Watershed conditions: 100% of watershed in pasture, continuously grazed. Grass growth and ground cover considered poor. Watershed formerly cultivated and severe erosion resulted.				0756	.12	2.40		0319	.9028	.2425	
				1025	.02	2.45		0324	1.0279	.3230	
								0333	1.3302	.4974	
								0338	1.5121	.6158	
								0343	1.9902	.7346	
								0348	.9550	.8305	
								0354	.6398	.9114	
								0357	.5106	.9401	
								0407	.3036	1.0073	
								0411	.2540	1.0259	
								0419	.1894	1.0550	
								0438	.1256	1.1028	
								0503	.0810	1.1446	
								0546	.0326	1.1853	
								0634	.0192	1.2041	
								0658	.0423	1.2150	
								0719	.0772	1.2352	
								0727	.0849	1.2460	
								0919	.0148	3/1.3310	

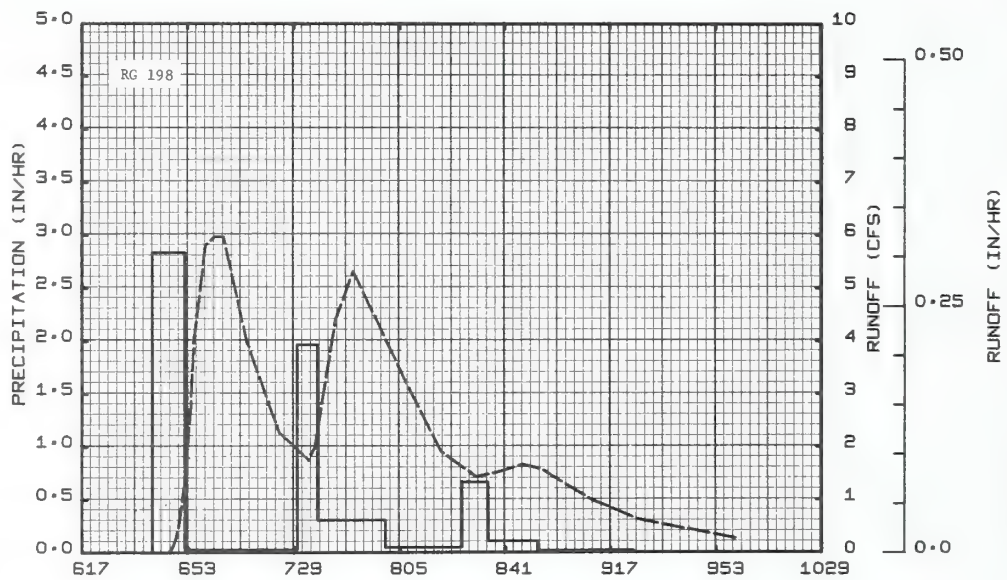
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 19.360. ^{1/} SOME INTERMEDIATE BREAK POINTS HAVE BEEN REMOVED TO SHORTEN THE LISTING. ^{2/} THIESSEN WEIGHTED RAINFALL USING RAIN GAGES 193 AND 194. ^{3/} RUNOFF ENDED AT 2355 ON APR. 12, 1967 WITH ACCUMULATED TOTAL OF 1.3610 INCHES.



APRIL 12, 1967

CHICKASHA, OKLAHOMA WATERSHED R-7

MONTHLY PRECIPITATION AND RUNOFF (inches)						CHICKASHA, OKLAHOMA				WATERSHED R-8				69.45					
						AREA - 18.5 ACRES													
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL					
1967	P1/ Q	.08 .000	.10 .000	2.15 .000	6.23 2.111	4.80 .467	2.02 .025	1.45 .002	1.20 .000	5.59 .315	2.41 .044	.28 .000	1.13 .000	27.44 2.964					
STA AVG (66-67) P2/ Q								2.42 2.58	3.79 1.93	3.85 .174	1.42 .022	.50 .000	.74 .000						
MEAN 67 YR		1.16	1.22	1.99	3.35	4.99	3.78	2.52	2.69	3.31	2.88	1.74	1.39	31.02					
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																			
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL																
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS				
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME			
1967	4-12	1.736	4-12	1.044	4-12	1.253	4-12	1.428	4-12	1.462	4-12	1.495	4-11	1.721	4-10	2.087			
MAXIMUMS FOR PERIOD OF RECORD																			
1966 TO 1967	4-12 1967	1.736	4-12 1967	1.044 1967	4-12 1967	1.253 1967	4-12 1967	1.428 1967	4-12 1967	1.462 1967	4-12 1967	1.495 1967	4-11 1967	1.721 1967	4-10 1967	2.087			
NOTES: Watershed conditions: Eighty-six percent of the area was cultivated from about 1907 until about 1935 when the land use was changed to pasture because of severe erosion. Although the watershed has not been reseeded to grass, the predominant grass species is little bluestem. Range condition class during the year was poor. The vegetative cover in November 1967, based on 25 clipped samples uniformly spaced, averaged 2,200 pounds per acre of standing vegetation and 1,300 pounds per acre of mulch. This watershed was within the same pasture area as Watershed R-7. 1/ Monthly precipitation obtained from Thiessen weighted rainfall values from two gages, Nos. 197 and 198. 2/ Precipitation and runoff records began July 1, 1966, therefore station average for the period January through June was omitted. 3/ Mean P based on 67-year (1901-67) U. S. Weather Bureau record period at Chickasha, Oklahoma.																			
1967 SELECTED RUNOFF EVENTS						CHICKASHA, OKLAHOMA				WATERSHED R-8				69.45					
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF 4/												
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)									
Event of April 10, 1967																			
2 RG 5/			4-10	RG	198		4-10												
3-19	.19	.000		0641	.00	.00		0641	.0000	.0000									
3-22	.82	.000		0652	2.84	.52		0645	.0001	.0000									
3-25	.44	.000		0730	.03	.54		0647	.0011	.0000									
3-26	.07	.000		0737	1.97	.77		0648	.0064	.0001									
3-30	.16	.000		0800	.31	.89		0649	.0153	.0003									
3-31	.43	.000		0826	.05	.91		0650	.0273	.0006									
4-07	.40	.000		0835	.67	1.01		0651	.0494	.0012									
4-09	1.10	.067		0852	.11	1.04		0652	.0688	.0022									
4-10	.00	6/.003		0925	.02	1.05		0653	.1102	.0037									
Watershed conditions: 100% of watershed in pasture, continuously grazed. Grass growth and ground cover considered poor. Majority of watershed formerly cultivated and severe erosion resulted.														0654	.1465	.0059			
														0655	.2100	.0088			
														0659	.3054	.0262			
														0702	.3144	.0417			
														0705	.3144	.0574			
														0713	.2100	.0921			
														0724	.1199	.1221			
														0734	.0922	.1386			
														0736	.1055	.1420			
														0743	.2318	.1618			
														0749	.2795	.1882			
														0809	.1581	.2648			
														0819	.1009	.2862			
														0831	.0761	.3026			
														0838	.0799	.3115			
														0842	.0839	.3170			
														0847	.0880	.3242			
														0853	.0839	.3328			
														0911	.0523	.3533			
														0926	.0338	.3636			
														1000	.0140	.3763			
														1032	.0064	.3814			
														1103	.0036	7/.3839			
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 18.654. FOR GENERAL DESCRIPTION OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1966, P. 69.45-1. MAPS - TOPOGRAPHY, P. 69.45-3 OF FOREGOING REFERENCE, REVISED COMPOSITE, P. 69.7-21 (1965 PUBLICATION). 4/ SOME INTERMEDIATE BREAK POINTS HAVE BEEN REMOVED TO SHORTEN LISTING. 5/ THIESSEN WEIGHTED RAINFALL USING RAIN GAGES 197 AND 198. 6/ RUNOFF PRIOR TO 0641. 7/ RUNOFF ENDED AT 0951 ON APR. 11, 1967 WITH ACCUMULATED TOTAL OF 0.3902 INCHES.																			

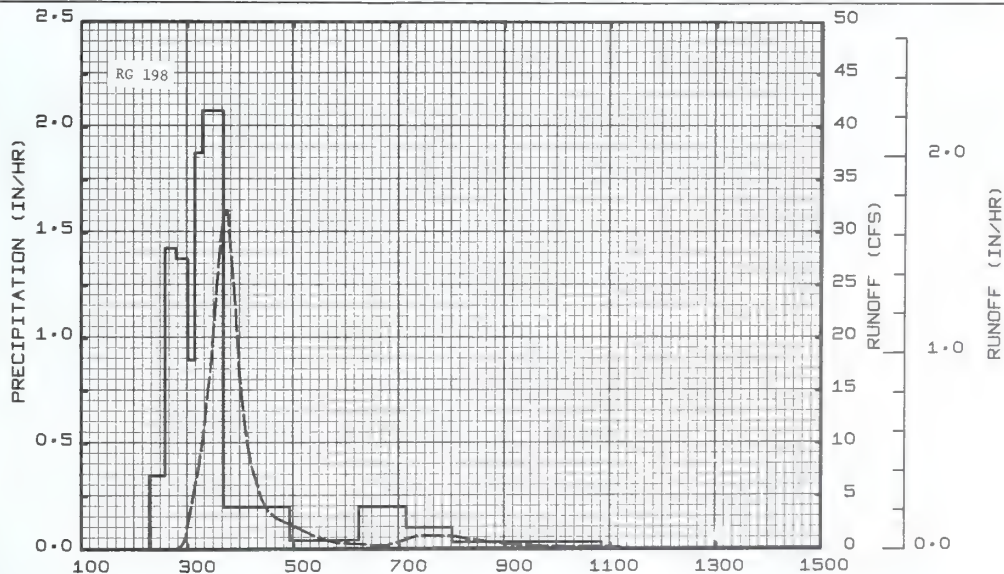


APRIL 10, 1967

CHICKASHA, OKLAHOMA WATERSHED R-8

1967 SELECTED RUNOFF EVENTS			CHICKASHA, OKLAHOMA				WATERSHED R-8				69.45
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF ^{1/}				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)	
			Event of April 12, 1967								
	2 RG ^{2/}		4-12	RG	198		4-12				
3-19	.19	.000		0217	.00	.00		0241	.0000	.0000	
3-22	.82	.000		0234	.35	.10		0253	.0183	.0008	
3-25	.44	.000		0247	1.43	.41		0258	.0688	.0040	
3-26	.07	.000		0300	1.38	.71		0259	.1102	.0055	
3-30	.16	.000		0308	.90	.83		0302	.1641	.0124	
3-31	.43	.000		0316	1.88	1.08		0312	.4023	.0598	
4-07	.40	.000		0340	2.08	1.91		0319	.6338	.1185	
4-09	1.10	.067		0455	.20	2.16		0327	.9872	.2283	
4-10	1.08	.407		0614	.04	2.21		0331	1.2429	.3020	
4-11	.00	.001		0708	.20	2.39		0337	1.5846	.4443	
Watershed conditions: 100% of watershed in pasture, continuously grazed. Grass growth and ground cover considered poor. Majority of watershed formerly cultivated and severe erosion resulted.				0800	.10	2.48		0341	1.7102	.5547	
				1050	.03	2.55		0343	1.7300	.6121	
							0345	1.7360	.6700		
							0354	1.2220	.8938		
							0359	.8476	.9768		
							0407	.5285	1.0653		
							0412	.4130	1.1035		
							0423	.2550	1.1636		
							0431	.1895	1.1933		
							0441	.1523	1.2218		
							0531	.0494	1.2984		
							0551	.0294	1.3115		
							0631	.0168	1.3259		
							0639	.0168	1.3281		
							0646	.0168	1.3301		
							0722	.0653	1.3514		
							0731	.0653	1.3612		
							0742	.0653	1.3732		
							0804	.0619	1.3967		
							0825	.0438	3/1.4145		

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 18.654. ^{1/} SOME INTERMEDIATE BREAK POINTS HAVE BEEN REMOVED TO SHORTEN LISTING. ^{2/} THIESSEN WEIGHTED RAINFALL USING RAIN GAGES 197 AND 198. ^{3/} RUNOFF ENDED AT 0221 ON APR. 13, 1967 WITH ACCUMULATED TOTAL OF 1.4649 INCHES.



APRIL 12, 1967

CHICKASHA, OKLAHOMA WATERSHED R-8

SONORA, TEXAS WATERSHED W-14

LOCATION: Sutton County, Tex.; gaging station on Water Street at Sonora city limit; Lowrey Draw, East Fork Devils River, Devils River, Rio Grande River Basin.

AREA: 30,720 acres (48.0 sq. miles)

SLOPES:	Slope—Percent	0-3	3-8	8-20
	Percent of area	54	43	3

SOILS: Residual, derived from highly calcareous limestones.

Type	Per- cent of area	Topsoil			Subsoil		Substratum		Internal drainage
		Avg. depth (in.)	Structure	Perme- ability	Structure	Perme- ability	Avg. depth to(in.)	Perme- ability	
Tarrant stony clay	48	5	Strong medium to fine granular	Moderate	-----	-----	5	Moderately slow	Rapid
Valera clay	26	12	Strong medium to fine granular	Moderate	Strong medium granular	Moderate	26	Moderately slow	Medium
Kavett clay	11	9	Moderate to strong very fine subangular blocky	Moderate	Moderate very fine subangular blocky	Moderate	16	Moderate	Slow
Tobosa clay	9	10	Strong coarse granular	Moderately slow	Weak medium blocky	Very slow	30	Very slow	Very slow
Knippa clay	5	10	Moderate medium granular	Moderate	Weak very fine blocky	Moderate	24	Moderate	Medium
Randall clay	1	10	Moderate to strong coarse granular	Slow	Weak medium blocky	Slow	40	Slow	Slow

EROSION:	Erosion class	1	2
	Percent of area	41	59

LAND CAPABILITY:	Class	I	II	III	IV	V	VI
	Percent of area	0	0	31	21	0	48

GEOLOGY: Edwards and associated limestones of Lower Cretaceous age. Thin beds of hard limestone with thicker beds of marly limestone occur on the plateau, 30 percent of the area, thickness 0 to 20 ft. Marly limestone outcrops on 18 percent of the area where the plateau slopes steepen, thickness 0 to 25 ft. Alternating beds of hard limestone and marly limestone outcrop on the middle slopes, 15 percent of the area, thickness 0 to 20 ft. The lower 32 percent of the watershed, on steeper slopes, hard limestone jointed and cavernous, thickness 20 to 70 ft. Alluvium and colluvium along stream channels occur on 5 percent of the area. All strata, strike N26°W, dip S54°W at 4.5 feet per mile. For areal distribution of formations, see geology map. Source of data: Geology and Groundwater Studies in Part of the Edwards Plateau of Texas, Including Sutton and Adjacent Counties, U. S. Dept. Agr., ARS 41-103, April, 1966.

SURFACE DRAINAGE: Good; most of drainage well-defined; principal drainageway, 10 miles long with 5 major tributaries with lengths of 1, 4, 7, 3, and 1.5 miles. Drainage from 70 percent of area controlled by 5 floodwater detention reservoirs.

CHARACTER OF FLOW: Ephemeral, continuous.

INSTRUMENTATION: Runoff: Current meter station, paved street dip control section, stripchart recorder with bubbler gage, 9.6 inches per day chart speed. Precipitation: 14 weighing-recording rain gages, 12-hr. time scale.

WATERSHED CONDITIONS: Caliche and paved roads - 0.4 percent; urban area - 0.3 percent; cropland - 0.3 percent; rangeland 99.0 percent. Cropland seeded to oats in fall for winter grazing. Rangeland moderately to severely overgrazed during the year depending upon climatic conditions and stocking rates. Reconnaissance type range survey made Dec. 10, 1963, based on percent of climax vegetation present. Survey accurately represents the year.

Range condition	Low Poor	Poor	Low Fair	Fair	High Fair
Percent climax vegetation	0-8	9-17	26-34	35-42	43-50
Percent of area	5	9	19	58	9

GENERALLY REPRESENTS: Rangeland of the Edwards Plateau land resource area (I-81) in southwest Texas.

MONTHLY PRECIPITATION AND RUNOFF (inches)						SONORA, TEXAS					WATERSHED W-14				70.01	
						AREA — 30,720 ACRES (48.0 SQ. MILES)										
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1961	P ¹ / _{Q²}						6.82 .00	2.66 .00	.88 .00	2.49 .00	3.64 .00	1.12 .00	.23 .00	17.84 .00		
1962	P ¹ / _{Q²}	.14 .00	.42 .00	.29 .00	3.66 T	.78 .00	3.20 T	.32 .00	.33 .00	5.15 .01	2.13 .00	1.09 .00	.30 .00	17.81 .01		
1963	P ¹ / _{Q²}	.07 .00	.83 .00	.09 .00	1.15 .00	5.16 .00	1.27 .00	1.02 .00	1.91 .00	1.94 .00	.48 .00	2.59 T	.76 .00	17.27 T		
1964	P ¹ / _Q	2.10 3/T	1.52 .00	1.13 .00	1.40 .00	2.18 3/T	.35 .00	2.23 .02	2.09 .00	10.86 .80	1.48 .00	.53 .00	.59 .00	26.46 .82		
1965	P ¹ / _Q	1.50 .00	2.64 .00	.30 .00	1.03 .00	6.49 .15	1.14 .00	1.72 .00	1.26 .00	1.02 .00	1.29 .00	.22 .00	1.18 .00	19.79 .15		
1966	P ¹ / _{Q²}	.79 .00	1.28 .00	.87 .00	4.62 T	2.01 T	1.31 .00	.81 .00	2.03 .00	3.47 .00	1.17 .00	.11 .00	.06 .00	18.53 T		
1967	P ¹ / _{Q²}	.04 .00	.36 .00	.98 .00	1.59 .00	3.08 T	2.77 .00	2.22 .00	.34 .00	5.59 .00	1.12 .00	3.11 .00	1.35 .00	22.55 T		
STA AVG ³ /P (62-67) Q		.77 T	1.18 .00	.61 .00	2.24 T	3.28 .02	1.67 T	1.38 T	1.33 .00	4.67 .14	1.28 .00	1.28 T	.71 .00	20.40 .16		
MEAN P ² / _{45 YR}		1.01	1.02	.96	1.69	2.88	2.74	2.08	1.75	3.08	2.17	.89	1.21	21.48		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1961	9-7	.00	9-7	.00	9-7	.00	9-7	.00	9-7	.00	9-7	.00	9-7	.00	9-7	.00
1962	11-8	T	11-8	T	11-8	T	11-8	T	11-8	T	11-8	T	11-8	T	11-8	T
1963	9-23	.06	9-23	.06	9-23	.12	9-23	.22	9-23	.27	9-23	.38	9-23	.61	9-21	.80
1964	5-18	.01	5-18	.01	5-18	.02	5-18	.04	5-18	.06	5-18	.10	5-17	.13	5-16	.15
1966	4-30	T	4-30	T	4-30	T	4-30	T	4-30	T	4-30	T	4-30	T	4-30	T
1967	5-29	T	5-29	T	5-29	T	5-29	T	5-29	T	5-29	T	5-29	T	5-29	T
MAXIMUMS FOR PERIOD OF RECORD																
1961 To 1967	9-23 1964	.06	9-23 1964	.06	9-23 1964	.12	9-23 1964	.22	9-23 1964	.27	9-23 1964	.38	9-23 1964	.61	9-21 1964	.80
NOTES: Watershed conditions: 0.4 percent caliche and paved roads; 0.3 percent urban area; 0.3 percent cropland; 99.0 percent rangeland. Cropland seeded to oats in fall for winter grazing. Rangeland moderately to severely overgrazed during the year depending on climatic conditions and stocking rates. ¹ / Precipitation data by Thiessen method using rain gages 1, 1-A, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, and 13. ² / All runoff was from the 9,280-acre uncontrolled area below the reservoirs. No outflow from the reservoirs occurred. ³ / Precipitation and runoff records began May 1961; part-year amounts not included in averages. ⁴ / Mean P based on 45-yr. (1923-67) record period at Texas Agricultural Experiment Station, Substation No. 14, 18 miles south of Sonora, Tex. ⁵ / From personal observation, no runoff occurred prior to establishing station in May 1961.																
1964 SELECTED RUNOFF EVENTS						SONORA, TEXAS					WATERSHED W-14				70.01	
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE	RAINFALL	RUNOFF	DATE	TIME OF DAY	INTENSITY	ACC.	DATE	TIME OF DAY	RATE	ACC.						
(inches)	(inches)	(inches)	MO-DAY		(in/hr)	(inches)	MO-DAY		(in/hr)	(inches)						
Event of September 21-22, 1964																
8-22	14 RG 6/ .21	.0000	9-21	RG	1		9-21	0250	.0000	.0000						
8-24	.15	.0000		0040	.00	.00		0305	.0001							
9-11	.11	.0000		0100	.09	.03		0315	.0002							
9-12	.07	.0000		0140	.01	.04		0615	.0002	.0007						
9-13	.79	.0000		0150	.78	.17		0630	.0001	.0007						
9-14	.22	.0000		0200	.12	.19		0735	.0001	.0008						
9-19	3.00	.0000		0220	.00	.19		0740	.0024	.0009						
9-20	.66	.0000		0230	.12	.21		0750	.0099	.0020						
Watershed conditions: Roads 0.4% of the area; urban area 0.3%; cropland 0.3%; rangeland 99.0%. Poor range condition 15% of the area; fair range condition 85%. Discharge from principal spillways of reservoirs S-9, S-10, S-11, and S-12.				0300	.06	.24		0800	.0139	.0040						
				0310	.96	.40		0810	.0173	.0066						
				0315	1.80	.55		0825	.0192	.0111						
				0320	.60	.60		0845	.0204	.0178						
				0330	.42	.67		0905	.0208	.0246						
				0340	.18	.70		0930	.0209	.0333						
				0345	.48	.74		0945	.0200	.0385						
		Continued on next page														
		NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 30975.90. ² / THIESSEN WEIGHTED RAINFALL USING RAIN GAGES 1, 1A, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, AND 13.														

1964			SELECTED RUNOFF EVENTS				SONORA, TEXAS		WATERSHED W-14		70.01	
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF					
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)		
Event of September 21-22, 1964 - Continued												
			9-21	0410	.31	.87	9-21	1000	.0191	.0433		
				0420	.06	.88		1030	.0166	.0523		
				0430	.54	.97		1050	.0146	.0575		
				0440	.24	1.01		1110	.0130	.0621		
				0600	.02	1.03		1130	.0115	.0662		
				0610	.18	1.06		1200	.0096	.0715		
				0640	.02	1.07		1230	.0082	.0759		
				0650	.48	1.15		1300	.0068	.0795		
				0800	.01	1.18		1400	.0051	.0854		
								1500	.0039	.0899		
				RG	.12							
				0030	.00	.00		1600	.0030	.0933		
				0040	.24	.04		1730	.0020	.0970		
				0050	.12	.06		1900	.0014	.0996		
				0115	.05	.08		2100	.0009	.1018		
				0120	2.04	.25		2400	.0005	.1038		
				0123	3.40	.42	9-22	0045	.0004	.1041		
				0127	1.50	.52		0515	.0004	.1061		
				0130	.80	.56		0900	.0002	.1071		
				0150	.12	.60		1200	.0001	.1076		
				0157	.40	.65		1300	1.0001	.1078		
				0200	2.60	.78						
				0205	1.32	.89						
				0215	1.14	1.08						
				0220	.96	1.16						
				0230	.24	1.20						
				0248	.13	1.24						
				0252	.90	1.30						
				0300	.15	1.32						
				0310	.00	1.32						
				0320	.18	1.35						
				0330	.30	1.40						
				0340	.72	1.52						
				0345	.84	1.59						
				0400	.68	1.76						
				0410	.78	1.89						
				0415	.24	1.91						
				0525	.03	1.94						
				0540	.52	2.07						
				0550	.18	2.10						
				0610	.09	2.13						
				0618	.22	2.16						
				0625	1.37	2.32						
				0630	.24	2.34						
				0650	.06	2.36						
				RG	1A	2.16						
				RG	2	2.50						
				RG	3	2.26						
				RG	4	1.18						
				RG	5	2.04						
				RG	6	1.28						
				RG	7	2.10						
				RG	8	1.93						
				RG	9	1.56						
				RG	10	1.90						
				RG	11	1.70						
				RG	13	2.02						
				14 RG	AVG. 2/	1.86						

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 30975.90. 1/ BEGINNING OF NEXT EVENT. 2/ THIESSEN WEIGHTED RAINFALL USING RAIN GAGES 1, 1A, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, AND 13.

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 30975.90. 1/ BEGINNING OF NEXT EVENT. 2/ THIESSEN WEIGHTED RAINFALL USING RAIN-GAGES 1, 1A, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, AND 13.

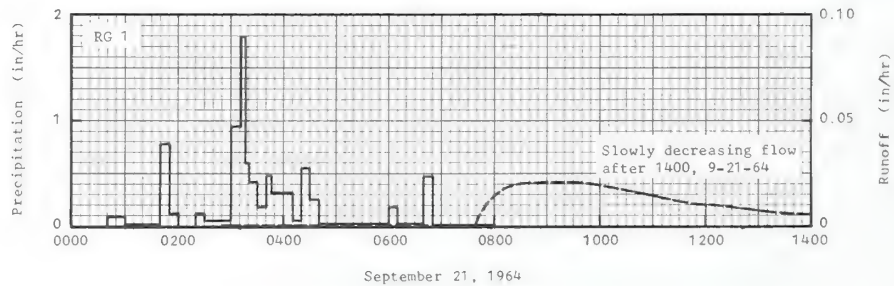
1964-65			SELECTED RUNOFF EVENTS				SONORA, TEXAS		WATERSHED W-14		70.01
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in./hr.)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in./hr.)	ACC. (inches)	
Event of September 23-24, 1964											
8-24	14 RG 1/ .15	.0000	9-23	RG	1		9-23	0500	T	.0000	
9-11	.11	.0000		0536	.00	.00		1000	T	.0001	
9-12	.07	.0000		0550	.26	.06		1020	.0001	.0001	
9-13	.79	.0000		0610	.12	.10		1040	.0005	.0002	
9-14	.22	.0000		0910	.02	.15		1045	.0011	.0002	
9-19	3.00	.0000		0930	.06	.17		1050	.0017	.0004	
9-20	.66	.0000		0945	.24	.23		1055	.0029	.0005	
9-21	1.86	.1038		0950	1.32	.34		1100	.0055	.0009	
9-22	.47	.0062		0955	1.56	.47		1110	.0066	.0019	
9-23	.00	2/.0002		1000	2.64	.69		1115	.0066	.0025	
Watershed conditions: Roads 0.4% of the area; urban area 0.3%; cropland 0.3%; rangeland 99.0%. Poor range condition 15% of the area; fair range condition 85%. Discharge from principal spillways of reser- voirs S-9, S-10, S-11, and S-12.				1005	1.68	.83		1120	.0064	.0030	
				1013	.82	.94		1130	.0056	.0040	
				1020	4.28	1.44		1140	.0053	.0049	
				1035	1.96	1.93		1145	.0053	.0054	
				1040	.60	1.98		1150	.0055	.0058	
				1100	.30	2.08		1200	.0069	.0069	
				1130	.06	2.11		1210	.0089	.0082	
				RG	12			1220	.0100	.0098	
				0500	.00	.00		1240	.0110	.0133	
				0520	.18	.06		1300	.0144	.0173	
			0910	.03	.17		1310	.0205	.0201		
			0934	.32	.30		1320	.0281	.0241		
			0940	1.90	.49		1330	.0372	.0297		
			0948	1.28	.66		1340	.0470	.0366		
			0954	3.60	1.02		1350	.0534	.0450		
			1000	5.70	1.59		1400	.0584	.0544		
			1008	.68	1.68		1420	.0627	.0748		
			1018	2.40	2.08		1425	.0635	.0801		
			1030	.75	2.23		1435	.0639	.0907		
			1036	.60	2.29		1440	.0639	.0960		
			1044	.38	2.34		1450	.0632	.1066		
			1050	.20	2.36		1505	.0612	.1221		
			1200	.02	2.39		1520	.0573	.1369		
			RG	1A	3.49		1535	.0530	.1507		
			RG	2	3.24		1550	.0479	.1632		
			RG	3	1.79		1600	.0436	.1709		
			RG	4	3.21		1610	.0386	.1777		
			RG	5	2.88		1620	.0356	.1839		
			RG	6	2.82		1630	.0324	.1896		
			RG	7	1.74		1650	.0269	.1994		
			RG	8	1.83		1710	.0222	.2075		
			RG	9	2.17		1745	.0188	.2160		
			RG	10	1.88		1820	.0143	.2282		
			RG	11	1.93		1905	.0120	.2380		
			RG	13	1.71		2005	.0100	.2489		
			14 RG	AVG. 1/	2.44			2150	.0082	.2648	
								2400	.0069	.2511	
								0020	.0069	.2834	
								0105	2/.0068	.2885	
Event of May 17-18, 1965											
4-25	.03	.0000	5-17	RG	1		5-17	2240	T	.0000	
4-26	.98	.0000		2049	.00	.00		2300	.0001	T	
5-10	.20	.0000		2156	.03	.03		2340	.0002	.0002	
5-14	.08	.0000		2214	.17	.08		2345	.0005	.0002	
5-15	.03	.0000		2219	.24	.10		2350	.0010	.0002	
5-16	2.50	.0117		2235	.17	.14		2400	.0012	.0004	
5-17	.00	2/.0105		2239	3.60	.38	5-18	0015	.0020	.0008	
Watershed conditions: Roads 0.4% of the area; urban area 0.3%; cropland 0.3%; range- land 99.0%. Poor range con- dition 10% of the area; fair condition 90%. Discharge from principal spillway of reser- voir S-12.				2244	2.64	.60		0025	.0024	.0011	
				2249	1.44	.72		0040	.0024	.0017	
				2257	.30	.76		0115	.0019	.0030	
Continued on next page											
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 30975.90. 1/ THIESSEN WEIGHTED RAINFALL USING RAIN GAGES 1, 1A, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, AND 13. 2/ RUNOFF PRIOR TO 0500. 3/ BEGINNING OF NEXT EVENT. 4/ RUNOFF PRIOR TO EVENT BEGINNING AT 2240.											

Continued on next page

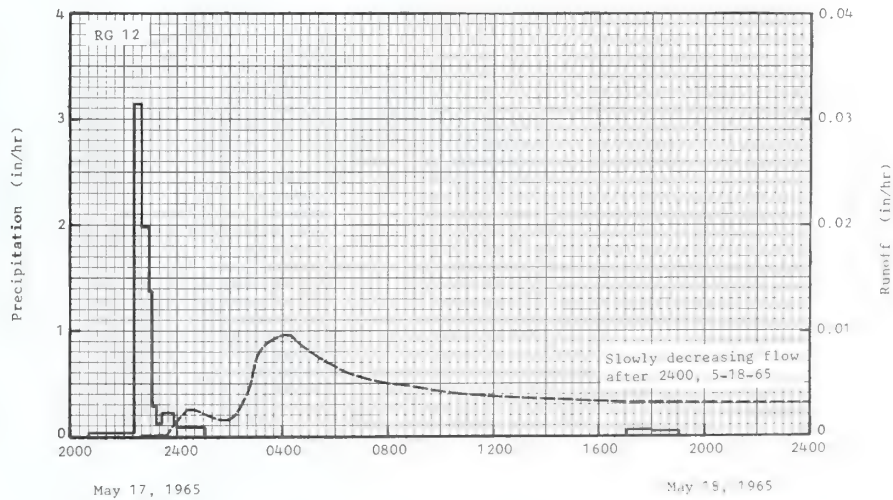
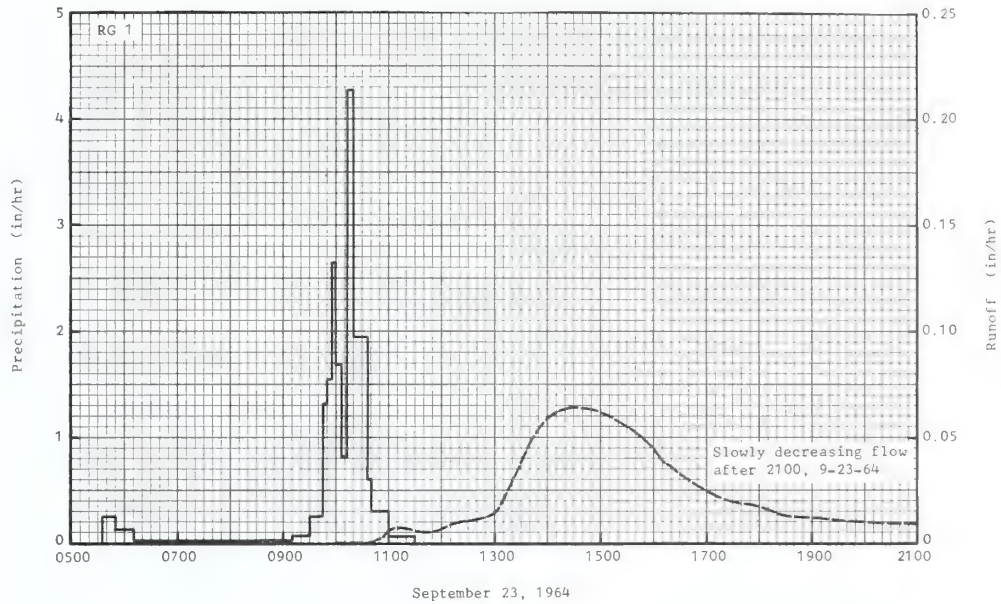
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 30975.90. 1/ THIESSEN WEIGHTED RAINFALL USING RAIN GAGES 1, 1A, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, AND 13. 2/ RUNOFF PRIOR TO 0500. 3/ BEGINNING OF NEXT EVENT. 4/ RUNOFF PRIOR TO EVENT BEGINNING AT 2240.

1965			SELECTED RUNOFF EVENTS				SONORA, TEXAS		WATERSHED W-14		70.01
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)	
Event of May 17-18, 1965 - Continued											
			5-17	2309	.70	.90	5-18	0145	.0016	.0039	
				2319	.48	.98		0155	.0016	.0041	
				2400	.13	1.09		0220	.0024	.0049	
			5-18	0010	.30	1.14		0245	.0047	.0063	
				0100	.09	1.22		0300	.0074	.0079	
				0159	.01	1.23		0345	.0092	.0144	
				0500	.00	1.23		0400	.0096	.0168	
				0600	.01	1.24		0415	.0096	.0192	
				1129	.00	1.24		0430	.0091	.0215	
				1140	.17	1.27		0445	.0086	.0237	
				1700	.00	1.27		0500	.0082	.0258	
				1709	.27	1.31		0530	.0073	.0297	
				1830	.06	1.39		0600	.0065	.0332	
				1919	.03	1.43		0645	.0058	.0378	
								0815	.0050	.0458	
			5-17	RG	12	.00		0945	.0044	.0529	
				2040	.00	.00		1145	.0038	.0611	
				2223	.02	.04		1645	.0032	.0784	
				2239	3.15	.88		1955	.0032	.0885	
				2255	1.99	1.41		2400	.0029	.1008	
				2302	1.37	1.57					
				2315	.28	1.63	5-19	0245	.0025	.1084	
				2325	.12	1.65		0545	.0019	.1150	
				2355	.22	1.76		0745	.0014	.1182	
				2400	.12	1.77		1045	.0009	.1216	
			5-18	0105	.08	1.86		1345	.0005	.1238	
				1705	.00	1.86		1745	.0002	.1252	
				1800	.05	1.91		2400	T	.1258	
				1905	.04	1.95	5-20	1000	.0000	.1259	
				RG	1A	2.43					
				RG	2	2.05					
				RG	3	1.82					
				RG	4	1.76					
				RG	5	2.22					
				RG	6	2.02					
				RG	7	2.04					
				RG	8	2.85					
				RG	9	2.19					
				RG	10	1.98					
				RG	11	2.42					
				RG	13	1.45					
			14 RG	AVG. 1/	2.08						

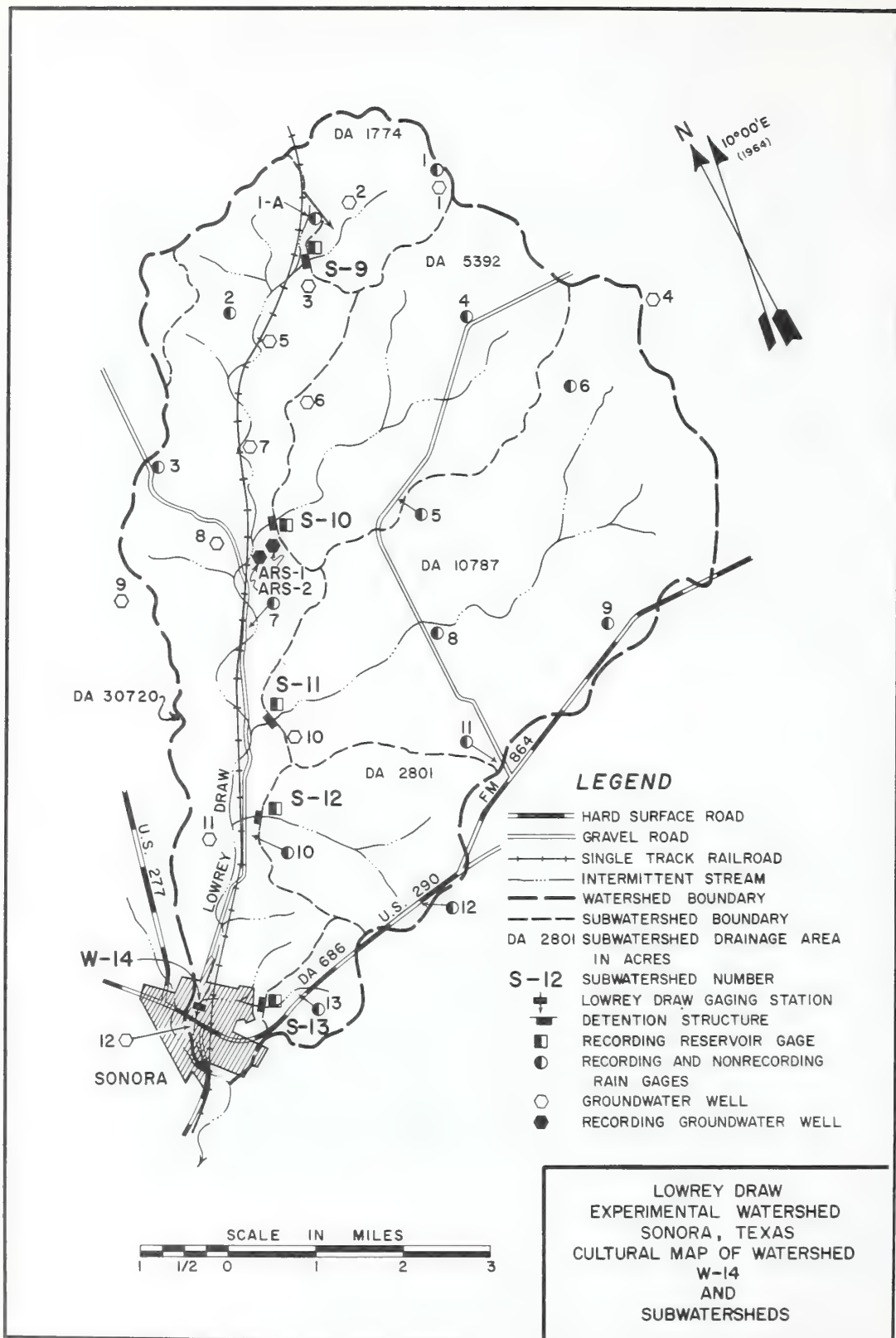
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 30975.90. 1/ THIESSEN METHOD USING RAIN GAGES 1, 1A, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, AND 13.

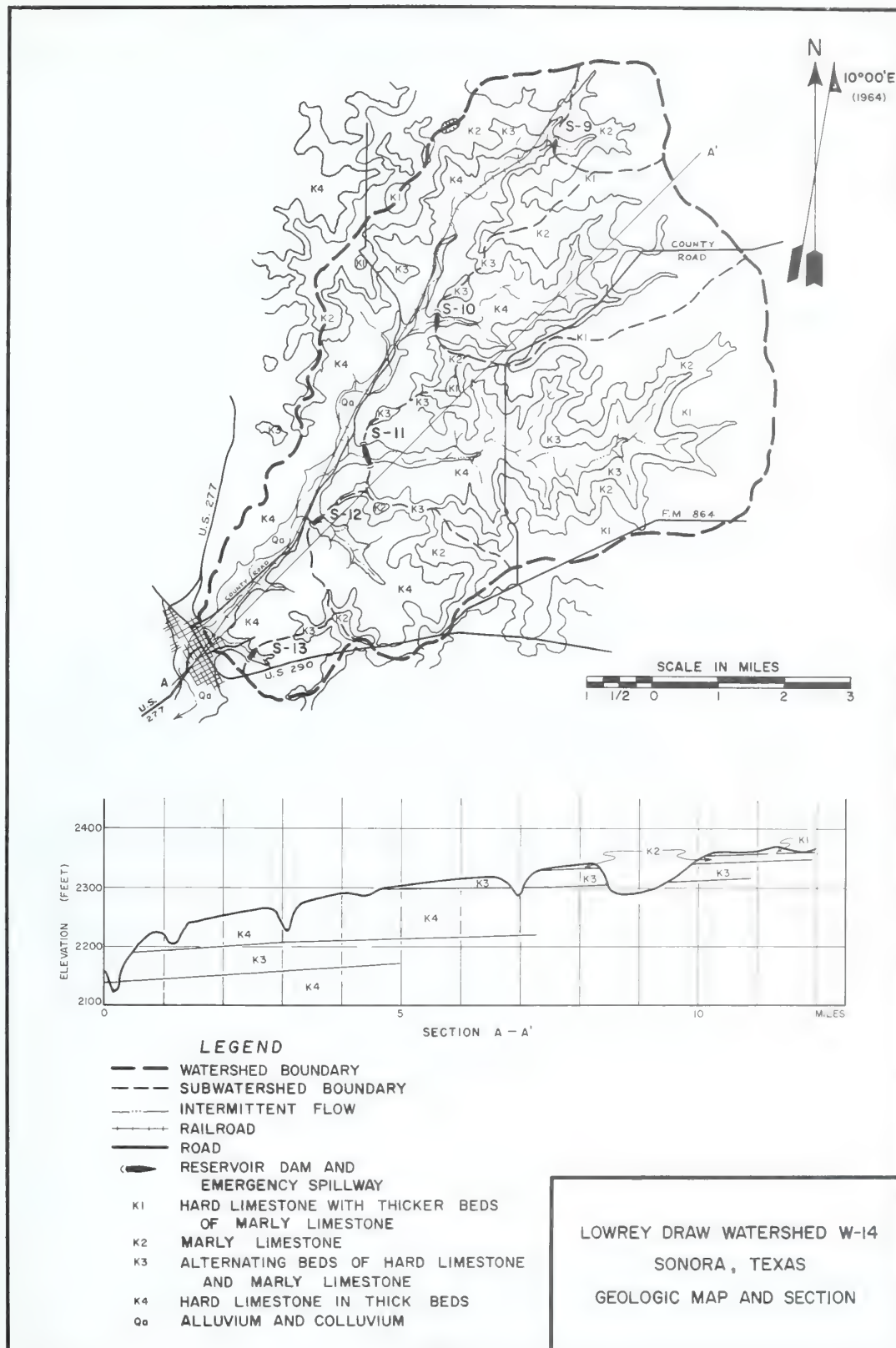


SONORA, TEXAS WATERSHED W-14



SONORA, TEXAS WATERSHED W-14





SONORA, TEXAS WATERSHED S-9

LOCATION: Sutton County, Tex.; gaging station on flood detention reservoir, 9 miles northeast of Sonora; Lowrey Draw, East Fork Devils River, Devils River, Rio Grande River Basin.

AREA: 1,774 acres (2.77 sq. miles)

<u>SLOPES:</u>	Slope—Percent	0-3	3-8
	Percent of area	96	4

SOILS: Residual, derived from highly calcareous limestones.

Type	Percent of area	Topsoil			Subsoil		Substratum		Internal drainage
		Avg. depth (in.)	Structure	Permeability	Structure	Permeability	Avg. depth to(in.)	Permeability	
Valera clay	76	12	Strong medium to fine granular	Moderate	Strong medium granular	Moderate	26	Moderately slow	Medium
Tobosa clay	20	10	Strong coarse granular	Moderately slow	Weak medium blocky	Very slow	30	Very slow	Very slow
Tarrant stony clay	4	5	Strong medium to fine granular	Moderate	-----	-----	5	Moderately slow	Rapid

<u>EROSION:</u>	Erosion class	1	2
	Percent of area	96	4

<u>LAND CAPABILITY:</u>	Class	I	II	III	IV	V	VI
	Percent of area	0	0	76	20	0	4

GEOLOGY: Edwards and associated limestones of Lower Cretaceous age. Thin beds of hard limestone with thicker beds of marly limestone occur on the plateau, 74 percent of the area, thickness 0 to 20 ft. Marly limestone outcrops on 22 percent of the area where the plateau slopes steeper, thickness 0 to 25 ft. Alternating beds of hard limestone and marly limestone outcrop on the steeper slopes, 4 percent of the area, thickness 0 to 20 ft. All strata, strike N26°W, dip S54°W at 4.5 feet per mile. For areal distribution of formations, see geology map of watershed W-14, page 70.1-8. Source of data: Geology and Groundwater Studies in Part of the Edwards Plateau of Texas, Including Sutton and Adjacent Counties, U. S. Dept. Agr., ARS 41-103, April 1966.

SURFACE DRAINAGE: Good; most of drainage poorly defined; two principal drainageways, each approximately 1 mile long.

CHARACTER OF FLOW: Ephemeral, continuous.

INSTRUMENTATION: Runoff: Stripchart waterstage recorder with bubbler gage on flood detention reservoir with detailed topographic map of flood pool, 9.6 inches per day chart speed. Precipitation: 2 weighing-recording rain gages, 12-hr. time scale.

WATERSHED CONDITIONS: Caliche roads - 0.3 percent; rangeland - 99.7 percent. Rangeland fair condition to moderately overgrazed during a year depending on climatic conditions and stocking rates. Reconnaissance type range survey made 1963-65 based on percent of climax vegetation present.

Range condition	Low Fair	Fair	High Fair
Percent climax vegetation	26-34	35-42	43-50
Percent of area, 1963	--	47	53
Percent of area, 1964	4	96	--
Percent of area, 1965	17	--	83

GENERALLY REPRESENTS: Upland range sites of the Edwards Plateau land resource area (I-81) in southwest Texas.

MONTHLY PRECIPITATION AND RUNOFF (inches)						SONORA, TEXAS		WATERSHED S-9					70.02	
						AREA — 1,774 ACRES (2.77 SQ. MILES)								
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1961	P ¹ / Q						8.01 .42E	2.49 .00	.92 .00	2.72 T	4.21 .03	1.24 .00	.28 .00	19.87 .45
1962	P ¹ / Q	.11 .00	.40 T	.25 .00	3.28 T	.92 T	2.62 T	.54 T	.24 .00	4.46 .01	2.77 .01	1.17 T	.26 .00	17.02 .02
1963	P ¹ / Q	.07 .00	.87 .00	.07 .00	1.03 .00	5.05 .01	1.09 T	1.32 T	2.80 T	2.22 .01	.31 .00	.57 T	.81 .00	16.21 .02
1964	P ¹ / Q	2.04 T	1.85 .01	1.08 T	1.60 T	1.77 T	.55 T	1.65 T	2.09 T	12.84 2.68	1.38 .00	.64 .00	.45 .00	27.94 2.69
1965	P ¹ / Q	1.52 .00	2.82 .00	.30 .00	.94 .00	5.29 .05	1.28 .00	.87 T	.79 .00	.87 .00	1.74 T	.26 .00	1.24 .00	17.92 .05
1966	P ¹ / Q	.78 .00	1.06 .00	.81 .00	3.88 .02	2.82 .01	1.80 T	.23 .00	1.12 .00	3.15 T	1.06 .00	.11 .00	.02 .00	16.84 .03
1967	P ¹ / Q	.03 .00	.32 .00	.98 T	1.30 .01	2.87 .01	2.79 .09	2.10 T	.20 T	6.26 .02	.80 .00	3.05 .00	1.39 .00	22.09 .13
STA AVG ² /P (62-67) Q		.76 T	1.22 T	.58 T	2.00 T	3.12 .01	1.69 .02	1.12 T	1.21 T	4.97 .45	1.34 T	.97 T	.70 .00	19.64 .48
MEAN P ³ / 45 YR		1.01	1.02	.96	1.69	2.88	2.74	2.08	1.75	3.08	2.17	.89	1.21	21.48

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS

YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1961 ^{5/}	6-15	.12E	6-15	.11E	6-15	.19E	6-15	.21E	6-15	.22E	6-15	.25E	6-15	.32E	6-15	.42E
1962	10-20	.02	10-20	.01	10-20	.01	10-20	.01	10-20	.01	10-20	.01	10-20	.01	10-12	.01
1963	9-12	.01	9-12	T	9-12	T	5-22	.01	5-22	.01	5-22	.01	5-22	.01	9-14	.01
1964	9-23	1.19	9-23	.57	9-23	.80	9-23	1.04	9-23	1.07	9-23	1.27	9-22	1.45	9-19	2.65
1965	5-17	.04	5-17	.02	5-17	.03	5-17	.04	5-17	.04	5-17	.04	5-16	.04	5-16	.04
1966	4-30	.03	4-30	.01	4-30	.01	4-30	.01	4-30	.01	4-30	.01	4-30	.01	4-25	.02
1967	6-1	.06	6-1	.04	6-1	.05	6-1	.07	6-1	.08	6-1	.08	6-1	.08	6-1	.05
MAXIMUMS FOR PERIOD OF RECORD																
1961 To 1967	9-23 1964	1.19	9-23 1964	.57	9-23 1964	.80	9-23 1964	1.04	9-23 1964	1.07	9-23 1964	1.27	9-22 1964	1.45	9-19 1964	2.68

NOTES: Watershed conditions: 0.3 percent caliche roads; 99.7 percent rangeland. Rangeland fair condition to moderately overgrazed during a year depending on climatic conditions and stocking rates. ¹/ Precipitation data by Thiessen method using rain gages 1 and 1A. ²/ Precipitation and runoff records began May 1961; part-year amounts not included in averages. ³/ Mean P based on 45-yr. (1923-67) record period at Texas Agricultural Experiment Station, Substation No. 14, 18 miles south of Sonora, Tex. ⁴/ From personal observation, no runoff occurred in 1961 prior to establishing the station in May.

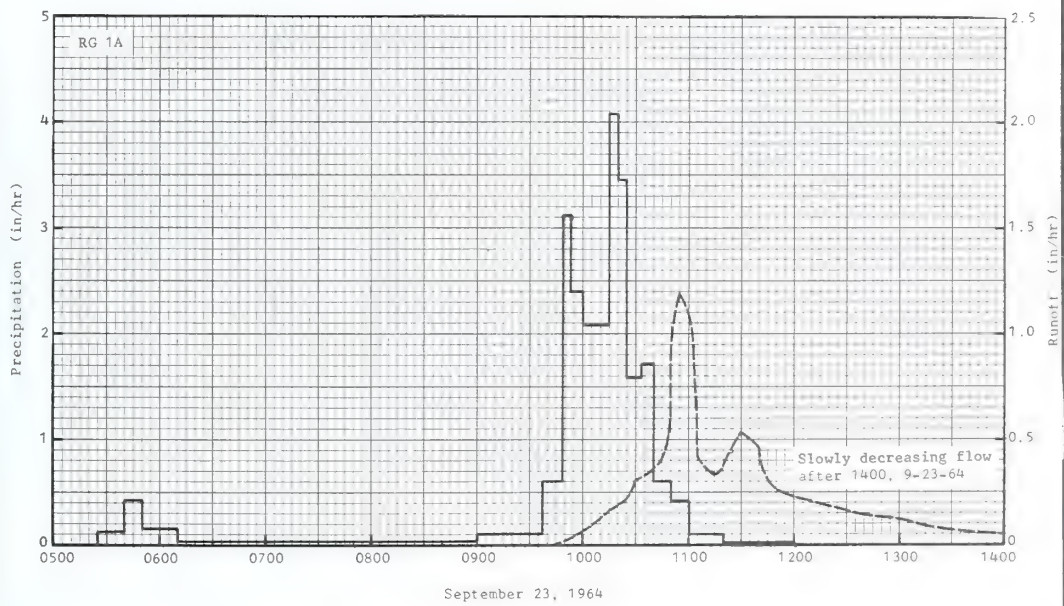
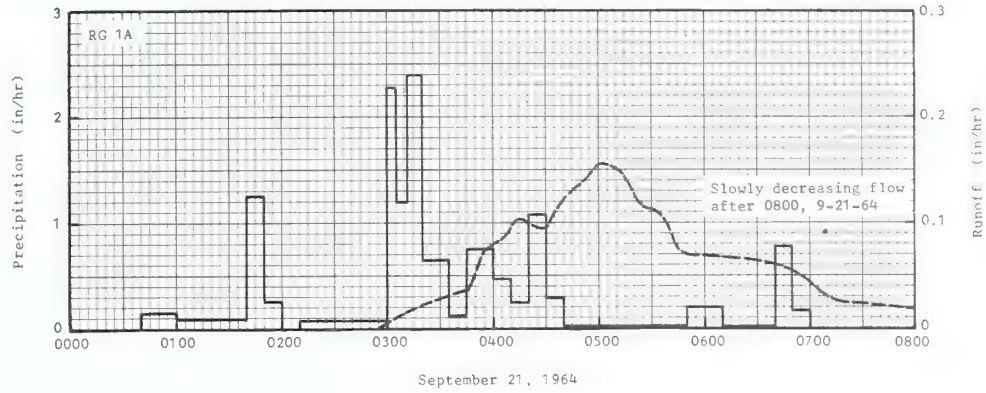
1964			SELECTED RUNOFF EVENT				SONORA, TEXAS		WATERSHED S-9			70.02	
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF						
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE ⁵ / (in/hr)	ACC. (inches)			
2 RG 6/			Event of September 21, 1964										
8-22	.05	.0000	9-21	RG	1A		9-21	0255	.0027	.0000			
8-24	.22	.0000		0040	.00	.00		0330	.0290	.0163			
9-13	1.05	.0018		0100	.15	.05		0345	.0344	.0239			
9-14	.35	.0016		0140	.09	.08		0355	.0720	.0359			
9-19	4.00	.2737		0150	1.26	.29		0405	.0828	.0491			
9-20	.84	.1679		0200	.24	.33		0415	.1032	.0663			
9-21	.00	.0078		0210	.00	.33		0430	.0956	.0902			
Watershed conditions: Caliche roads - 0.3%; range- land - 99.7%. Rangeland in fair condition.				0300	.08	.40		0440	.1206	.1103			
				0305	2.28	.59		0450	.1368	.1331			
				0312	1.20	.73		0500	.1542	.1588			
				0320	2.40	1.05		0510	.1524	.1842			
				0335	.64	1.21		0520	.1284	.2056			
				0345	.12	1.23		0535	.1088	.2328			
				0400	.76	1.42		0545	.0744	.2452			
				0410	.48	1.50		0555	.0696	.2568			

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 1788.78. ⁵/ RUNOFF RATE SHOWN IS THE AVERAGE RATE IN IN/HR FOR THE PRECEDING TIME INTERVAL DETERMINED FROM THE ACCUMULATION DATA AS COMPUTED FROM THE RESERVOIR STAGE-VOLUME CURVE AND SPILLWAY FLOW RATING. ⁶/ THIESSEN WEIGHTED RAINFALL USING RAIN GAGES 1 AND 1A. ⁷/ RUNOFF PRIOR TO EVENT BEGINNING AT 0255.

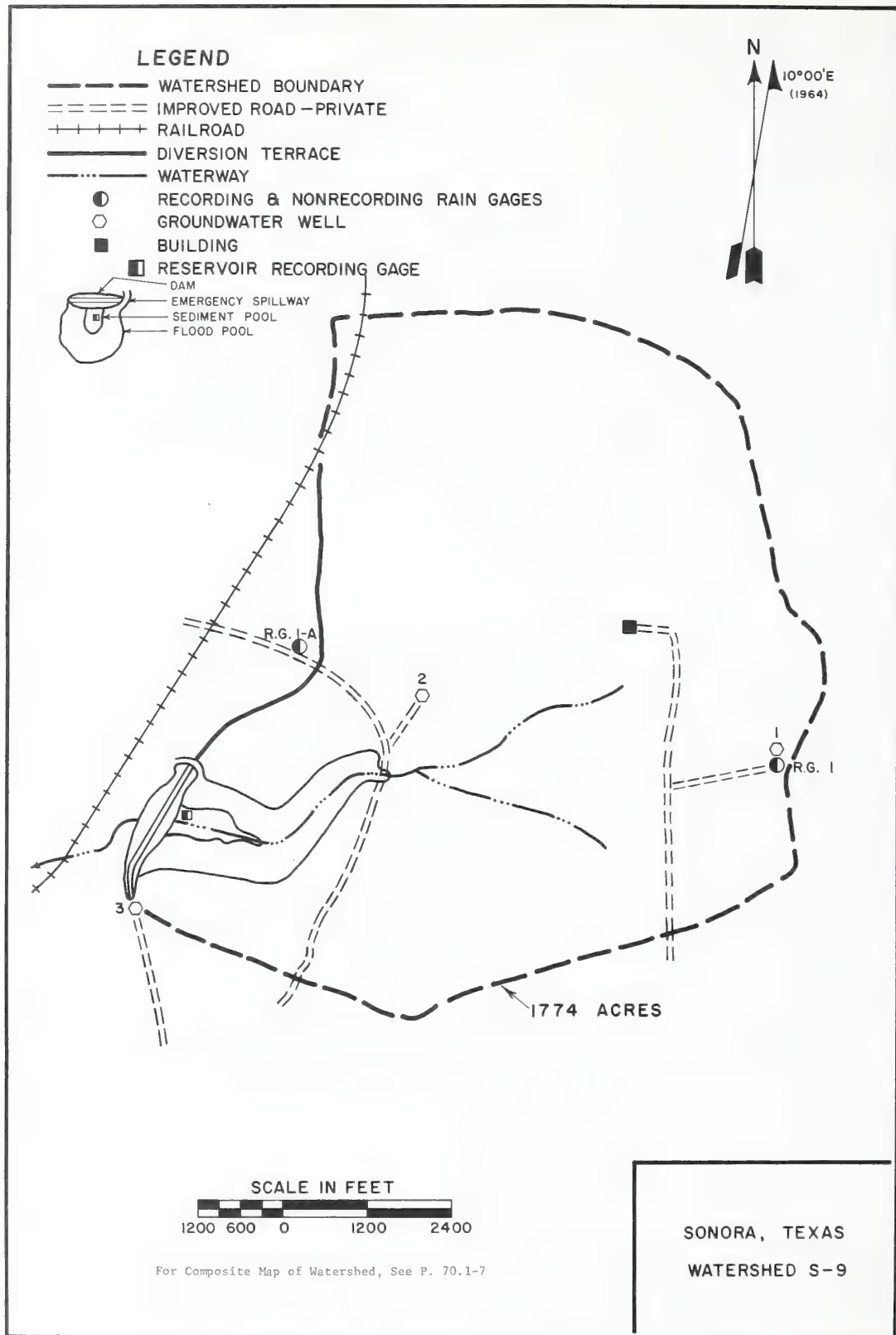
1964			SELECTED RUNOFF EVENTS				SONORA, TEXAS		WATERSHED S-9		70.02	
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF					
DATE MO-DAY	RAINFALL (inches)	RUNOFF inches	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE <u>1</u> / (in/hr)	ACC. (inches)		
Event of September 21, 1964 - Continued												
2 RG <u>2</u> /			9-21	0420	.24	1.54	9-21	0630	.0674	.2961		
				0430	1.08	1.72		0700	.0442	.3182		
			0440	.30	1.77	0715	.0273	.3250				
			0550	.03	1.80	0730	.0244	.3312				
			0610	.21	1.87	0800	.0191	.3406				
			0640	.02	1.88	0825	.0154	.3522				
			0650	.78	2.01	0900	.0060	.3537				
			0700	.18	2.04	0930	.0052	.3563				
			RG	1	1.16	1000	.0046	.3586				
			2 RG	AVG. <u>2</u> /	1.68	1130	.0035	.3638				
						1400	.0025	.3702				
						1630	.0012	.3731				
						1900	.0009	.3754				
						2230	<u>3</u> /0009	.3787				
Event of September 23, 1964												
8-24	.22	.0000	9-23	RG	1A	9-23	0600	.0023	.0000			
9-13	1.05	.0018		0525	.00		.00	0945	.0018	.0066		
9-14	.35	.0016		0540	.12		.03	1000	.0556	.0205		
9-19	4.00	.2737		0550	.42		.10	1015	.1630	.0612		
9-20	.84	.1679		0610	.15		.15	1025	.2137	.0916		
9-21	1.76	.3900		0900	.03		.23	1030	.2965	.1163		
9-22	.44	.1140		0937	.10		.29	1045	.4000	.2163		
9-23	.00	<u>4</u> /0137		0948	.60		.40	1050	.6000	.2663		
				0953	3.12		.66	1055	1.1880	.3653		
				1000	2.40		.94	1100	1.0920	.4563		
			1015	2.08	1.46	1105	.4200	.4913				
			1020	4.08	1.80	1115	.3264	.5457				
			1025	3.46	2.08	1120	.3540	.5752				
			1033	1.58	2.29	1125	.4428	.6121				
			1040	1.71	2.49	1130	.5304	.6563				
			1050	.60	2.59	1140	.4608	.7331				
			1100	.42	2.66	1150	.2586	.7762				
			1120	.09	2.69	1200	.2286	.8133				
			1200	.02	2.70	1215	.1856	.8597				
			RG	1	2.11	1230	.1624	.9003				
			2 RG	AVG. <u>2</u> /	2.46	1300	.1202	.9604				
						1330	.0732	.9970				
						1400	.0530	1.0235				
						1445	.0296	1.0472				
						1515	.0179	1.0577				
						1600	.0070	1.0638				
						1730	.0025	1.0651				
						1830	.0011	1.0663				
						2030	.0000	1.0673				
Watershed conditions: Caliche roads - 0.3%; range- land - 99.7%. Rangeland in fair condition.												

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 1788.78. 1/ RUNOFF RATE SHOWN IS THE AVERAGE RATE IN IN/HR FOR THE PRECEDING TIME INTERVAL DETERMINED FROM THE ACCUMULATION DATA AS COMPUTED FROM THE RESERVOIR STAGE-VOLUME CURVE AND SPILLWAY FLOW RATING. 2/ THIESSEN WEIGHTED RAINFALL USING RAIN GAGES 1 AND 1A. 3/ BEGINNING OF NEXT EVENT. 4/ RUNOFF PRIOR TO EVENT BEGINNING AT 0600.

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 1788.78. 1/ RUNOFF RATE SHOWN IS THE AVERAGE RATE IN IN/HR FOR THE PRECEDING TIME INTERVAL DETERMINED FROM THE ACCUMULATION DATA AS COMPUTED FROM THE RESERVOIR STAGE-VOLUME CURVE AND SPILLWAY FLOW RATING. 2/ THIESSEN WEIGHTED RAINFALL USING RAIN GAGES 1 AND 1A. 3/ BEGINNING OF NEXT EVENT. 4/ RUNOFF PRIOR TO EVENT BEGINNING AT 0600.



SONORA, TEXAS WATERSHED S-9



SONORA, TEXAS WATERSHED S-10

LOCATION: Sutton County, Tex.: gaging station on flood detention reservoir, 6 miles northeast of Sonora; Lawrey Draw, East Fork Devils River, Devils River, Rio Grande River Basin.

AREA: 5,392 acres (8.42 sq. miles)

SLOPES:	Slope—Percent	0-3	3-8
	Percent of area	67	33

SOILS: Residual, derived from highly calcareous limestones.

Type	Per- cent of area	Topsoil			Subsoil		Substratum		Internal drainage
		Avg. depth (in.)	Structure	Perme- ability	Structure	Perme- ability	Avg. depth to(in.)	Perme- ability	
Valera clay	48	12	Strong medium to fine granular	Moderate	Strong medium granular	Moderate	26	Moderately slow	Medium
Tarrant stony clay	34	5	Strong medium to fine granular	Moderate	-----	-----	5	Moderately slow	Rapid
Tobosa clay	18	10	Strong coarse granular	Moderately slow	Weak medium blocky	Very slow	30	Very slow	Very slow

EROSION:	Erosion class	1	2
	Percent of area	66	34

LAND CAPABILITY:	Class	I	II	III	IV	V	VI
	Percent of area	0	0	48	18	0	34

GEOLOGY: Edwards and associated limestones of Lower Cretaceous age. Thin beds of hard limestone with thicker beds of marly limestone occur on the plateau, 45 percent of the area, thickness 0 to 20 ft. Marly limestone outcrops on 20 percent of the area where the plateau slopes steepen, thickness 0 to 25 ft. Alternating beds of hard limestone and marly limestone outcrop on the middle slopes, 14 percent of the area, thickness 0 to 20 ft. The lower 20 percent of the watershed, on steeper slopes, hard limestone jointed and cavernous, thickness 20 to 70 ft. Alluvium and colluvium along stream channels occur on 1 percent of the area. All strata, strike N26°W, dip S54°W at 4.5 feet per mile. For distribution of formations, see geology map of watershed W-14, page 70.1-8. Source of data: Geology and Groundwater Studies in Part of the Edwards Plateau of Texas, Including Sutton and Adjacent Counties, U. S. Dept. Agr., ARS 41-103, April 1966.

SURFACE DRAINAGE: Good; most of the drainage well defined; principal drainageway 4 miles long with intersecting drainageway 2 miles long and numerous well defined side drainages.

CHARACTER OF FLOW: Ephemeral, continuous.

INSTRUMENTATION: Runoff: Stripchart waterstage recorder with bubbler gage on flood detention reservoir with detailed topographic map of flood pool, 9.6 inches per day chart speed. Precipitation: 8 weighing-recording rain gages, 12-hr. time scale.

WATERSHED CONDITIONS: Caliche roads - 0.4 percent; rangeland - 99.6 percent. Rangeland moderately to severely overgrazed during a year depending on climatic conditions and stocking rates. Reconnaissance type survey made 1963-65 based on percent of climax vegetation present.

Range condition	Poor	High Poor	Low Fair	Fair	High Fair
Percent climax vegetation	9-17	18-25	26-34	35-42	43-50
Percent of area, 1963	14.1	--	1.8	48.5	35.6
Percent of area, 1964	--	--	25.6	74.4	--
Percent of area, 1965	--	16.4	0.3	22.1	61.2

GENERALLY REPRESENTS: Upland and low stony hills range sites of the Edwards Plateau land resource area (I-81) in southwest Texas.

MONTHLY PRECIPITATION AND RUNOFF (inches)						SONORA, TEXAS		WATERSHED S-10					70.03	
						AREA — 5,392 ACRES (8.42 SQ. MILES)								
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL	
1961 P ¹ / _Q						7.95 .11E	2.14 .00	1.06 .00	2.48 .00	3.79 .04E	1.20 .00	.32 .00	18.94 .15E	
1962 P ¹ / _Q	.15 .00	.44 .00	.31 .00	3.62 .00	.66 .00	3.21 T	.52 .00	.27 .00	5.01 T	2.13 T	1.10 .00	.28 .00	17.70 T	
1963 P ¹ / _Q	.05 .00	.80 .00	.10 .00	1.08 .00	5.23 T	1.38 .00	1.24 T	2.74 .00	1.40 T	.34 .00	2.37 T	.74 .00	17.47 T	
1964 P ¹ / _Q	2.17 .00	1.50 .00	1.02 T	1.40 .00	2.27 .00	.34 .00	1.43 .00	1.76 .00	11.99 1.93	1.52 .00	.62 .00	.55 .00	26.57 1.93	
1965 P ² / _Q	1.52 .00	2.51 .00	.46 .00	1.01 .00	6.10 .19	1.20 .00	1.51 .00	1.48 .00	.85 .00	1.28 .00	.22 .00	1.11 .00	19.25 .19	
1966 P ² / _Q	.78 .00	1.35 .00	.79 .00	4.22 T	2.11 T	1.42 .00	.48 .00	1.52 .00	3.03 .00	1.00 .00	.11 .00	.09 .00	16.90 T	
1967 P ² / _Q	.03 .00	.35 .00	1.12 .00	1.70 .03	2.34 .00	3.12 .09	1.78 .00	.16 .00	5.35 .00	.90 .00	3.19 .00	1.35 .00	21.39 .12	
STA AVG ³ / _P (62-67) Q	.78 .00	1.16 .00	.63 T	2.17 T	3.12 .03	1.78 .02	1.16 T	1.32 .00	4.60 .32	1.20 T	1.27 T	.69 .00	19.58 .37	
MEAN P ⁴ / _{45 YR}	1.01	1.02	.96	1.69	2.88	2.74	2.08	1.75	3.08	2.17	.89	1.21	21.48	

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1961 ⁵ / _E	6-18	.06E	6-18	.04E	6-18	.05E	6-18	.06E	6-18	.06E	6-18	.06E	6-16	.11E	6-16	.11E
1962	9-10	T	9-10	T	9-10	T	9-10	T	9-10	T	9-10	T	9-10	T	9-7	T
1963	9-14	.01	9-14	T	9-14	T	9-14	T	9-14	T	9-14	T	9-14	T	9-12	T
1964	9-23	.81	9-23	.72	9-23	.95	9-23	1.11	9-23	1.15	9-23	1.23	9-23	1.52	9-19	1.93
1965	5-18	.11	5-17	.09	5-17	.12	5-17	.18	5-17	.18	5-17	.18	5-17	.18	5-16	.19
1966	4-30	T	4-30	T	4-30	T	4-30	T	4-30	T	4-30	T	4-30	T	4-30	T
1967	6-13	.06	6-13	.04	6-13	.05	6-13	.05	6-13	.05	6-13	.05	6-13	.05	6-13	.05

MAXIMUMS FOR PERIOD OF RECORD																
1961 To 1967	9-23 1964	.81	9-23 1964	.72	9-23 1964	.95	9-23 1964	1.11	9-23 1964	1.15	9-23 1964	1.23	9-23 1964	1.52	9-19 1964	1.93

NOTES: Watershed conditions: Caliche roads - 0.4 percent; rangeland - 99.6 percent. Range condition poor to fair, with moderate to severe overgrazing during a year depending on climatic conditions and stocking rates. ¹/ Thiessen weighted rainfall using rain gages 1, 1A, 2, 3, 4, 5, 6, and 7. ²/ Thiessen weighted rainfall using rain gages 1, 1A, 2, 4, 5, 6, and 7. ³/ Precipitation and runoff records began May 1961; part-year amounts not included in averages. ⁴/ Mean P based on 45-yr. (1923-67) record period at Texas Agricultural Experiment Station, Substation No. 14, 18 miles south of Sonora, Tex. ⁵/ From personal observation, no runoff occurred in 1961 prior to date station established.

1964 SELECTED RUNOFF EVENTS						SONORA, TEXAS		WATERSHED S-10					70.03	
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF							
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE ⁶ / _(in/hr)	ACC. (inches)				
Event of September 21, 1964														
8-22	.11	.0000	9-21	RG	.4		9-21	0235	.0000	.0000				
8-24	.04	.0000		0114	.00	.00		0245	.0221	.0037				
9-11	.13	.0000		0136	.18	.07		0255	.0242	.0077				
9-12	.18	.0000		0144	1.60	.23		0305	.0310	.0129				
9-13	.89	.0000		0149	.36	.26		0315	.0287	.0177				
9-14	.23	.0000		0214	.03	.27		0325	.0260	.0220				
9-19	3.60	.1112		0234	.12	.31		0335	.0322	.0274				
9-20	.64	.0114		0254	.00	.31		0345	.0306	.0325				
Watershed conditions: Caliche roads - 0.4%; rangeland - 99.6%. Range condition: poor 16%; fair 84%.				0259	.12	.32		0355	.0319	.0378				
				0304	.36	.35		0400	.0333	.0406				
				0310	.50	.40		0410	.0478	.0485				
				0314	1.50	.50		0420	.0463	.0563				
				0324	.66	.61		0430	.0913	.0715				
				0414	.20	.78		0435	.0943	.0793				
				0428	.56	.91		0445	.1238	.0999				

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 5436.92. ⁶/ RUNOFF RATE SHOWN IS THE AVERAGE RATE IN IN/HR FOR THE PRECEDING TIME INTERVAL DETERMINED FROM THE ACCUMULATION DATA AS COMPUTED FROM THE RESERVOIR STAGE-VOLUME CURVE AND SPILLWAY FLOW RATING. ⁷/ THIESSEN WEIGHTED RAINFALL USING RAIN GAGES 1, 1A, 2, 3, 4, 5, 6, AND 7.

1964			SELECTED RUNOFF EVENTS				SONORA, TEXAS		WATERSHED S-10			70.03
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF					
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE 1/ (in/hr)	ACC. (inches)		
Event of September 21, 1964 - Continued												
8 RG 2/			9-21	0434	.10	.92	9-21	0450	.0778	.1064		
				0554	.02	.94		0500	.0584	.1162		
				0604	.24	.98		0515	.0548	.1299		
				0634	.02	.99		0530	.0600	.1449		
				0639	.36	1.02		0545	.0656	.1613		
				0644	.60	1.07		0600	.0640	.1773		
				0704	.06	1.09		0615	.0572	.1916		
				RG	5			0630	.0372	.2009		
				0040	.00	.00		0645	.0492	.2132		
				0100	.12	.04		0700	.0464	.2248		
				0140	.09	.10		0730	.0344	.2420		
				0145	.60	.15		0800	.0206	.2523		
				0150	.72	.21		0900	.0175	.2698		
				0210	.57	.40		1000	.0119	.2817		
				0220	.36	.46		1200	.0000	.2877		
				0225	.12	.47						
				0230	.72	.53						
				0235	.12	.54						
				0240	.60	.59						
				0300	.09	.62						
				0500	.44	1.50						
				0520	.63	1.71						
				0550	.02	1.72						
				0610	.30	1.82						
				0630	.03	1.83						
				0640	.12	1.85						
				0650	.54	1.94						
				0700	.18	1.97						
				RG	1	1.18						
				RG	1A	2.04						
				RG	2	2.20						
				RG	3	2.17						
				RG	6	1.28						
				RG	7	2.03						
				8 RG	AVG. 2/	1.48						
Event of September 23, 1964												
8-24	.04	.0000	9-23	RG	4		9-23	0930	.0000	.0000		
9-11	.13	.0000		0520	.00	.00		0940	.0015	.0002		
9-12	.18	.0000		0600	.12	.08		0950	.0053	.0010		
9-13	.89	.0000		0930	.03	.18		1000	.0167	.0030		
9-14	.23	.0000		0940	.18	.21		1010	.0256	.0067		
9-19	3.60	.1112		0950	1.74	.50		1015	.0680	.0123		
9-20	.64	.0114		0955	1.80	.65		1030	.1220	.0428		
9-21	1.56	.2877		1000	4.80	1.05		1045	.2381	.1023		
9-22	.42	.0000		1010	2.04	1.39		1100	.4298	.2098		
				1020	3.36	1.95		1115	.5852	.3561		
				1030	2.46	2.36		1130	.8093	.5584		
				1035	1.32	2.47		1145	.7464	.7450		
				1040	.72	2.53		1200	.6600	.9100		
				1100	.30	2.63		1215	.2224	.9656		
				1130	.06	2.66		1230	.0907	.9883		
				RG	5			1300	.0575	1.0189		
				0457	.00	.00		1330	.0521	1.0450		
				0517	.06	.03		1400	.0381	1.0660		
				0524	.26	.06		1500	.0272	1.0995		
				0537	.28	.12		1600	.0258	1.1262		
				0547	.06	.13		1700	.0213	1.1492		
				0657	.00	.13		1800	.0000	1.1598		
				0707	.24	.17		2000		1.1598		
				0857	.02	.20						
				0907	.06	.21						
Continued on next page												

Watershed conditions: Caliche roads - 0.4%; rangeland - 99.6%. Range condition: poor 16%; fair 84%.

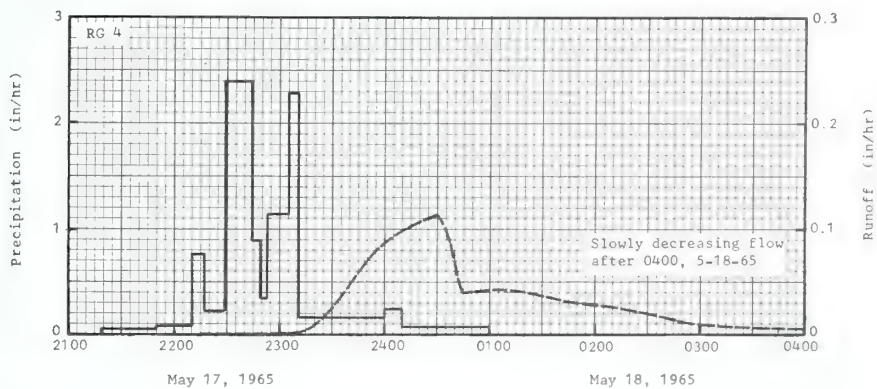
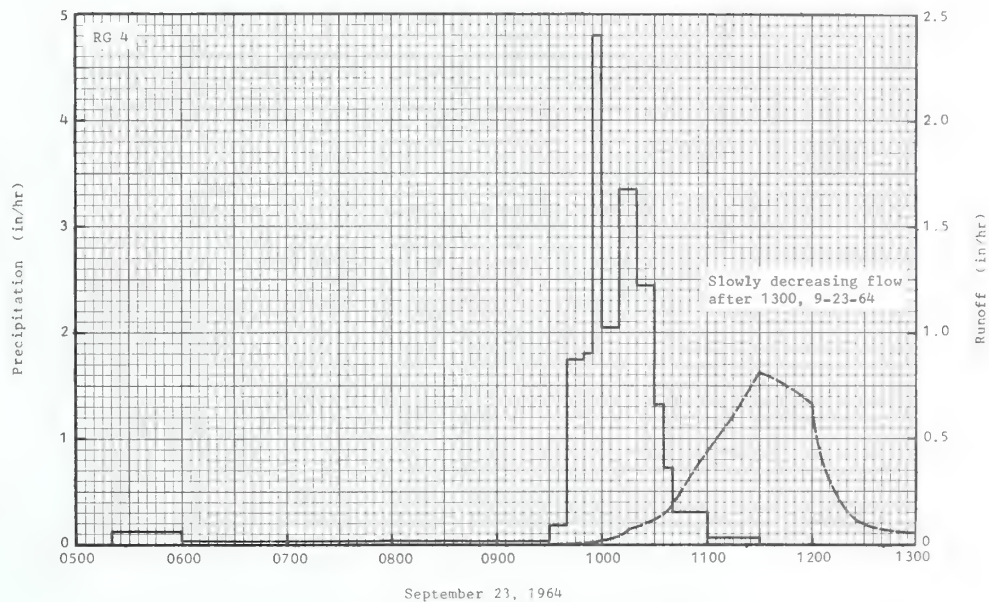
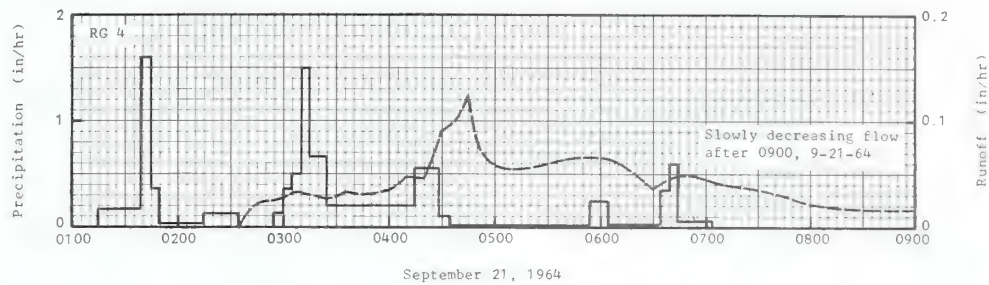
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 5436.92. 1/ RUNOFF RATE SHOWN IS THE AVERAGE RATE IN IN/HR FOR THE PRECEDING TIME INTERVAL DETERMINED FROM THE ACCUMULATION DATA AS COMPUTED FROM THE RESERVOIR STAGE-VOLUME CURVE AND SPILLWAY FLOW RATING. 2/ THIESSEN WEIGHTED RAINFALL USING RAIN GAGES 1, 1A, 2, 3, 4, 5, 6, AND 7.

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 5436.92. 1/ RUNOFF RATE SHOWN IS THE AVERAGE RATE IN IN/HR FOR THE PRECEDING TIME INTERVAL DETERMINED FROM THE ACCUMULATION DATA AS COMPUTED FROM THE RESERVOIR STAGE-VOLUME CURVE AND SPILLWAY FLOW RATING. 2/ THIESSEN WEIGHTED RAINFALL USING RAIN GAGES 1, 1A, 2, 3, 4, 5, 6, AND 7.

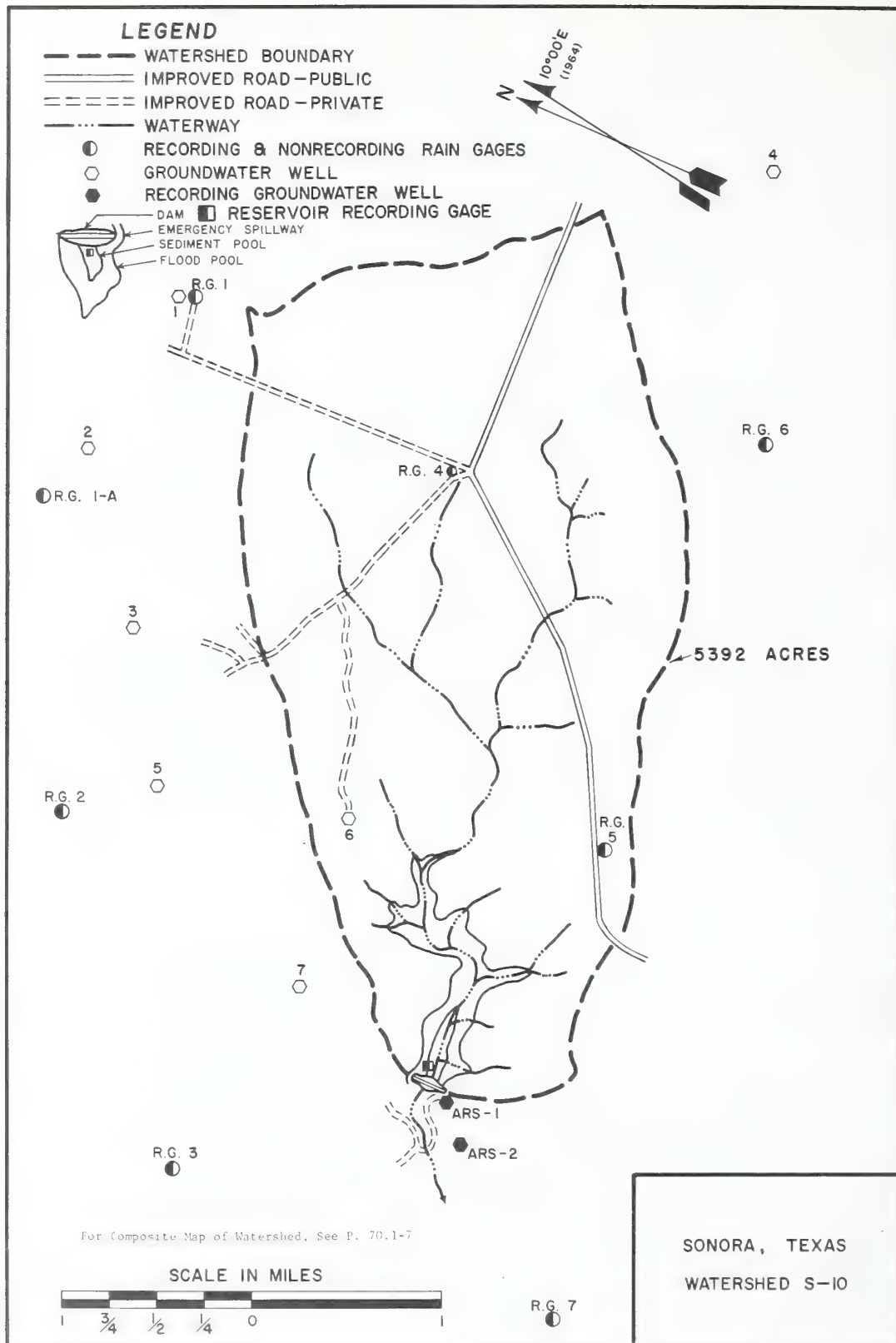
1964-65			SELECTED RUNOFF EVENTS				SONORA, TEXAS		WATERSHED S-10				70.03	
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF							
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in./hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE 1/ (in./hr)	ACC. (inches)				
Event of September 23, 1964 - Continued														
			9-23	0917	.42	.28								
				0925	.90	.40								
				0931	.80	.48								
				0937	1.00	.58								
				0941	.75	.63								
				0947	2.20	.85								
				0953	2.30	1.08								
				0957	2.85	1.27								
				1007	3.00	1.77								
				1027	1.74	2.35								
				1039	1.55	2.66								
				1047	.52	2.73								
				1107	.15	2.78								
				RG	1	2.11								
				RG	1A	2.70								
				RG	2	2.51								
				RG	3	1.68								
				RG	6	2.61								
				RG	7	1.65								
				8 RG	AVG. 2/	2.66								
Event of May 17-18, 1965														
4-25	7 RG 3/ .02	.0000	5-17	RG	4		5-17	2215	.0000	.0000				
4-26	.99	.0000		2118	.00	.00		2315	.0027	.0009				
5-10	.05	.0000		2150	.06	.03		2330	.0255	.0073				
5-14	.09	.0000		2210	.09	.06		2345	.0602	.0223				
5-15	.02	.0000		2217	.77	.15		2400	.0883	.0444				
5-16	2.39	.0155		2228	.22	.19	5-18	0030	.1119	.0993				
Watershed conditions: Roads 0.4% of the area; rangeland 99.6%. Poor range conditions 16% of the area; fair condition 84%.				2244	2.40	.83		0045	.0402	.1093				
				2248	.90	.89		0100	.0431	.1201				
				2253	.36	.92		0130	.0378	.1391				
				2305	1.15	1.15		0215	.0235	.1587				
				2311	2.30	1.38		0245	.0131	.1656				
				2400	.17	1.52		0315	.0094	.1707				
				5-18	0010	.24	1.56		0345	.0072	.1745			
				4/ 0100	.08	1.63		0415	.0054	.1772				
								0430	T	.1779				
				5-17	RG	5		0500	.0000	.1779				
					2058	.00	.00							
					2218	.09	.03							
					2228	2.16	.39							
					2232	3.00	.59							
					2238	2.10	.80							
					2246	4.20	1.36							
					2253	2.06	1.60							
					2303	1.14	1.79							
					2313	.54	1.88							
					2318	.24	1.90							
					2400	.14	2.00							
				5-18	0008	.23	2.03							
				4/ 0058	.07	2.10								
				RG	1	1.23								
				RG	1A	1.83								
				RG	2	1.48								
				RG	6	1.97								
				RG	7	1.82								
				7 RG	AVG. 3/	1.80								

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 5436.92. 1/ RUNOFF RATE SHOWN IS THE AVERAGE RATE IN IN/HR FOR THE PRECEEDING TIME INTERVAL DETERMINED FROM THE ACCUMULATION DATA AS COMPUTED FROM THE RESERVOIR STAGE-VOLUME CURVE AND SPILLWAY FLOW RATING. 2/ THIESSEN WEIGHTED RAINFALL USING RAIN GAGES 1, 1A, 2, 3, 4, 5, 6, AND 7. 3/ THIESSEN WEIGHTED RAINFALL USING RAIN GAGES 1, 1A, 2, 4, 5, 6, AND 7. 4/ RAINFALL BETWEEN 1130 AND 2000 ON 5-18 AMOUNTED TO 0.13 INCH (WEIGHTED) BUT DID NOT CAUSE RUNOFF.

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 5436.92. 1/ RUNOFF RATE SHOWN IS THE AVERAGE RATE IN IN/HR FOR THE PRECEDING TIME INTERVAL DETERMINED FROM THE ACCUMULATION DATA AS COMPUTED FROM THE RESERVOIR STAGE-VOLUME CURVE AND SPILLWAY FLOW RATING. 2/ THIESSEN WEIGHTED RAINFALL USING RAIN GAGES 1, 1A, 2, 3, 4, 5, 6, AND 7. 3/ THIESSEN WEIGHTED RAINFALL USING RAIN GAGES 1, 1A, 2, 4, 5, 6, AND 7. 4/ RAINFALL BETWEEN 1130 AND 2000 ON 5-18 AMOUNTED TO 0.13 INCH (WEIGHTED) BUT DID NOT CAUSE RUNOFF.



SONORA, TEXAS WATERSHED S-10



SONORA, TEXAS WATERSHED S-11

LOCATION: Sutton County, Tex.; gaging station on flood detention reservoir, 4 miles northeast of Sonora; Lowrey Draw, East Fork Devils River, Devils River, Rio Grande River Basin.

AREA: 10,787 acres (16.85 sq. miles)

SLOPES:	Slope—Percent	0-3	3-8	8-20
	Percent of area	62	37	1

SOILS: Residual, derived from highly calcareous limestones.

Type	Per- cent of area	Topsoil			Subsoil		Substratum		Internal drainage
		Avg. depth (in.)	Structure	Perme- ability	Structure	Perme- ability	Avg. depth to(in.)	Perme- ability	
Tarrant stony clay	39	5	Strong medium to fine granular	Moderate	-----	-----	5	Moderately slow	Rapid
Valera clay	36	12	Strong medium to fine granular	Moderate	Strong medium granular	Moderate	26	Moderately slow	Medium
Tobosa clay	11	10	Strong coarse granular	Moderately slow	Weak medium blocky	Very slow	30	Very slow	Very slow
Kavett clay	10	9	Moderate to strong very fine subangular blocky	Moderate	Moderate very fine subangular blocky	Moderate	16	Moderate	Slow
Knippa clay	3	10	Moderate medium granular	Moderate	Weak very fine blocky	Moderate	24	Moderate	Medium
Randall clay	1	10	Moderate to strong coarse granular	Slow	Weak medium blocky	Slow	40	Slow	Slow

EROSION:	Erosion class	1	2
	Percent of area	51	49

LAND CAPABILITY:	Class	I	II	III	IV	V	VI
	Percent of area	0	0	39	22	0	39

GEOLOGY: Edwards and associated limestones of Lower Cretaceous age. Thin beds of hard limestone with thicker beds of marly limestone occur on the plateau, 42 percent of the area, thickness 0 to 20 ft. Marly limestone outcrops on 19 percent of the area where the plateau slopes steeper, thickness 0 to 25 ft. Alternating beds of hard limestone and marly limestone outcrop on the middle slopes, 16 percent of the area, thickness 0 to 20 ft. The lower 21 percent of the watershed, on steeper slopes, hard limestone jointed and cavernous, thickness 20 to 70 ft. Alluvium and colluvium along stream channels occur on 2 percent of the area. All strata, strike N26°W, dip S54°W at 4.5 feet per mile. For distribution of formations, see geology map of watershed W-74, page 70.1-81. Source of data: Geology and Groundwater Studies in Part of the Edwards Plateau of Texas, Including Sutton and Adjacent Counties, U. S. Dept. Agr., ARS 41-103, April 1966.

SURFACE DRAINAGE: Good; most of drainage well defined; principal drainageway 7 miles long with intersecting drainageway 2 miles long and numerous well defined side drainages.

CHARACTER OF FLOW: Ephemeral, continuous.

INSTRUMENTATION: Runoff: Stripchart waterstage recorder with bubbler gage on flood detention reservoir with detailed topographic map of flood pool, 9.6 inches per day chart speed. Precipitation: 7 weighing-recording rain gages, 12-hr. time scale.

WATERSHED CONDITIONS: Caliche and paved roads - 0.4 percent; rangeland - 99.6 percent. Rangeland moderately to severely overgrazed depending on climatic conditions. Reconnaissance type survey made 1963-65 based on percent of climax vegetation present.

Range condition	Low Poor	Poor	High Poor	Low Fair	Fair	High Fair
Percent climax vegetation	0-8	9-17	18-25	26-34	35-42	43-50
Percent of area, 1963	--	--	--	18.9	81.1	--
Percent of area, 1964	--	--	--	--	100.0	--
Percent of area, 1965	0.3	--	0.7	15.4	19.7	63.9

GENERALLY REPRESENTS: Upland, low stony hills, and alluvium range sites of the Edwards Plateau land resource area (I-81) in southwest Texas.

MONTHLY PRECIPITATION AND RUNOFF (inches)						SONORA, TEXAS		WATERSHED S-11					70.04				
						AREA — 10,787 ACRES (16.85 SQ. MILES)											
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL				
1961 P ¹ / _Q						7.23 .38E	2.39 .00	1.36 .00	2.34 .00	3.53 .01E	1.09 .00	.23 .00	18.17 .39E				
1962 P ¹ / _Q	.15 .00	.46 .00	.30 .00	3.94 .01	.57 .00	3.16 T	.42 .00	.26 .00	5.00 .01	1.83 T	1.03 .00	.34 .00	17.46 .02				
1963 P ¹ / _Q	.07 .00	.80 .00	.14 .00	1.11 .00	5.45 T	1.30 .00	.84 T	2.14 .00	1.31 T	.42 T	2.38 .00	.77 .00	16.73 T				
1964 P ¹ / _Q	2.22 T	1.40 T	1.25 .00	1.34 .00	2.14 T	.30 .00	2.07 T	2.11 .00	10.72 1.25	1.57 T	.52 .00	.62 .00	26.26 1.25				
1965 P ¹ / _Q	1.50 .00	2.46 .00	.26 .00	1.11 .00	7.03 .68	1.10 .00	2.42 .00	1.15 .00	1.13 .00	1.20 .00	.18 .00	1.12 .00	20.66 .68				
1966 P ¹ / _Q	.80 .00	1.44 .00	.77 .00	5.01 .09	1.92 T	1.44 .00	.93 .00	2.19 .00	3.48 .00	1.17 .00	.10 .00	.05 .00	19.30 .09				
1967 P ¹ / _Q	.04 .00	.34 .00	.96 .00	1.69 .01	3.40 T	2.88 .06	2.29 T	.28 .00	5.28 .01	1.23 .00	3.18 .00	1.33 .00	22.90 .08				
STA AVG ² / _P (62-67)	.80 T	1.15 T	.61 .00	2.37 .02	3.42 .11	1.70 .01	1.50 T	1.36 .00	4.49 .21	1.24 T	1.23 .00	.70 .00	20.57 .35				
MEAN P ³ / _Q 45 YR	1.01	1.02	.96	1.69	2.88	2.74	2.08	1.75	3.08	2.17	.89	1.21	21.48				
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																	
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL														
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS		
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	
1961 ⁴ / _Q	6-18	.11E	6-18	.10E	6-18	.19E	6-18	.25E	6-18	.29E	6-18	.29E	6-16	.38E	6-16	.38E	
1962	10-12	.01	9-7	T	9-7	.01	9-7	.01	9-7	.01	9-7	.01	9-7	.01	9-7	.01	
1963	7-14	.01	9-12	T	9-12	T	9-12	T	9-12	T	9-12	T	9-12	T	9-12	T	
1964	9-23	.39	9-23	.31	9-23	.55	9-23	.77	9-23	.78	9-23	.78	9-23	.91	9-19	1.25	
1965	5-17	.27	5-17	.21	5-17	.33	5-17	.50	5-17	.52	5-17	.54	5-16	.67	5-16	.68	
1966	4-30	.05	4-30	.04	4-30	.06	4-30	.08	4-30	.09	4-30	.09	4-30	.09	4-30	.09	
1967	4-17	.04	6-13	.02	6-13	.03	6-13	.04	6-13	.04	6-13	.04	6-13	.04	6-13	.04	
MAXIMUMS FOR PERIOD OF RECORD																	
1961 To 1967	9-23	.39	9-23	.31	9-23	.55	9-23	.77	9-23	.78	9-23	.78	9-23	.91	9-19	1.25	
	1964		1964		1964		1964		1964		1964		1964		1964		
NOTES: Watershed conditions: Caliche roads - 0.4 percent; rangeland - 99.6 percent. Range condition poor to fair; moderately to severely overgrazed during a year depending on climatic conditions and stocking rates. ¹ / _Q Precipitation data by Thiessen method using rain gages 5, 6, 7, 8, 9, 10, and 11. ² / _Q Precipitation and runoff records began May 1961; part-year amounts not included in averages. ³ / _Q Mean P based on 45-yr. (1923-1967) record period at the Texas Agricultural Experiment Station, Substation No. 14, 18 miles south of Sonora, Tex. ⁴ / _Q From personal observation, runoff did not occur in 1961 prior to May.																	
1964 SELECTED RUNOFF EVENTS						SONORA, TEXAS				WATERSHED S-11					70.04		
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF										
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE ⁵ / _(in/hr)	ACC. (inches)							
Event of September 21, 1964																	
8-22	.42	.0000	9-21	RG	6		9-21	0045	.0000	.0000							
8-24	.03	.0000		0030	.00	.00		0130	.0005	.0004							
9-11	.16	.0000		0130	.02	.02		0145	.0026	.0010							
9-12	.11	.0000		0145	.48	.14		0200	.0023	.0016							
9-13	.71	.0000		0150	.24	.16		0230	.0012	.0022							
9-14	.13	.0000		0315	.03	.20		0300	.0012	.0028							
9-19	3.26	.0148		0320	3.24	.47		0315	.0027	.0035							
9-20	.67	.0564		0330	.48	.55		0330	.0075	.0053							
Watershed conditions: Caliche roads - 0.4%; rangeland - 99.6%. Range in fair condition.				0350	.06	.57		0345	.0131	.0086							
				0414	.30	.69		0355	.0374	.0132							
				0420	.90	.78		0400	.0260	.0154							
				0427	.60	.85		0405	.0231	.0173							
				0430	.40	.87		0415	.0412	.0230							
				0550	.02	.89		0425	.0355	.0282							
				0605	.56	1.03		0445	.0836	.0486							
Continued on next page																	
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 10,876.86. ⁵ / _Q RUNOFF RATE SHOWN IS THE AVERAGE RATE IN IN/HR FOR THE PRECEDING TIME INTERVAL DETERMINED FROM THE ACCUMULATION DATA AS COMPUTED FROM THE RESERVOIR STAGE-VOLUME CURVE AND SPILLWAY FLOW RATING. ⁶ / _Q THIESSEN WEIGHTED RAINFALL USING RAIN GAGES 5, 6, 7, 8, 9, 10, AND 11.																	

1964			SELECTED RUNOFF EVENTS				SONORA, TEXAS		WATERSHED S-11		70.04	
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF					
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE 1/ (in/hr)	ACC. (inches)		
Event of September 21, 1964 - Continued												
			9-21	0635	.02	1.04	9-21	0500	.0725	.0650		
				0640	1.32	1.15		0515	.0675	.0830		
				0647	.86	1.25		0530	.0805	.1017		
				0700	.74	1.28		0545	.0712	.1195		
				RG	8			0600	.0656	.1359		
				0037	.00	.00		0615	.0736	.1543		
				0045	.45	.06		0630	.0804	.1754		
				0126	.03	.08		0645	.0952	.1992		
				0130	1.50	.18		0700	.0856	.2206		
				0150	.54	.36		0715	.0796	.2405		
				0230	.48	.68		0730	.0776	.2599		
				0240	.36	.74		0800	.0150	.2674		
				0245	.00	.74		0830	.0030	.2694		
				0250	.48	.78		1000	.0014	.2716		
				0320	.40	.98		1200	.0000	.2723		
				0400	.34	1.21						
				0510	.30	1.56						
				0520	.12	1.58						
				0535	.00	1.58						
				0550	.28	1.65						
				0600	.18	1.68						
				0620	.06	1.70						
				0640	.15	1.75						
				0650	.24	1.79						
				0700	.30	1.84						
				0800	.01	1.85						
				RG	5	2.00						
				RG	7	2.03						
				RG	9	1.51						
				RG	10	1.84						
				RG	11	1.68						
				7 RG	AVG. 2/	1.63						
Event of September 23, 1964												
8-24	.03	.0000	9-23	RG	6		9-23	0945	.0000	.0000		
9-11	.16	.0000		0518	.00	.00		1000	.0081	.0020		
9-12	.11	.0000		0558	.12	.08		1015	.0109	.0047		
9-13	.71	.0000		0758	.03	.14		1030	.0138	.0082		
9-14	.13	.0000		0908	.00	.14		1045	.0344	.0168		
9-19	3.26	.0148		0928	.09	.17		1100	.1182	.0463		
9-20	.67	.0000		0933	.36	.20		1120	.1935	.1108		
9-21	1.67	.2723		0938	.72	.26		1135	.2402	.1708		
9-22	.48	.0000		0948	2.58	.69		1150	.2595	.2357		
				0955	4.71	1.24		1205	.2137	.2892		
Watershed conditions: Caliche roads - 0.4%; rangeland - 99.6%. Range in fair condition.								1220	.2470	.3509		
				1002	1.89	1.46		1235	.2487	.4131		
				1008	2.40	1.70		1250	.3799	.5080		
				1013	1.92	1.86		1305	.3909	.6058		
				1020	.86	1.96		1320	.2204	.6609		
				1028	2.92	2.35						
				1048	.69	2.58		1335	.1286	.6930		
				1158	.03	2.61		1350	.0662	.7096		
				RG	8			1405	.0439	.7205		
				0400	.00	.00		1420	.0353	.7294		
				0510	.02	.02		1505	.0204	.7501		
				0530	.12	.06		1550	.0153	.7616		
				0540	.18	.09		1650	.0084	.7724		
				0600	.09	.12		1805	.0038	.7780		
				0710	.00	.12		1900	.0020	.7807		
				0720	.12	.14		2000	T	.7817		
				0800	.04	.17		2100	.0000	.7817		
				0910	.01	.18						
				0925	.24	.24						
				0930	.60	.29						
				0940	.36	.35						
Continued on next page												
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 10,876.86. 1/ RUNOFF RATE SHOWN IS THE AVERAGE RATE IN IN/HR FOR THE PRECEDING TIME INTERVAL DETERMINED FROM THE ACCUMULATION DATA AS COMPUTED FROM THE RESERVOIR STAGE-VOLUME CURVE AND SPILLWAY FLOW RATING. 2/ THIESSEN WEIGHTED RAIN GAGES 5, 6, 7, 8, 9, 10, AND 11.												

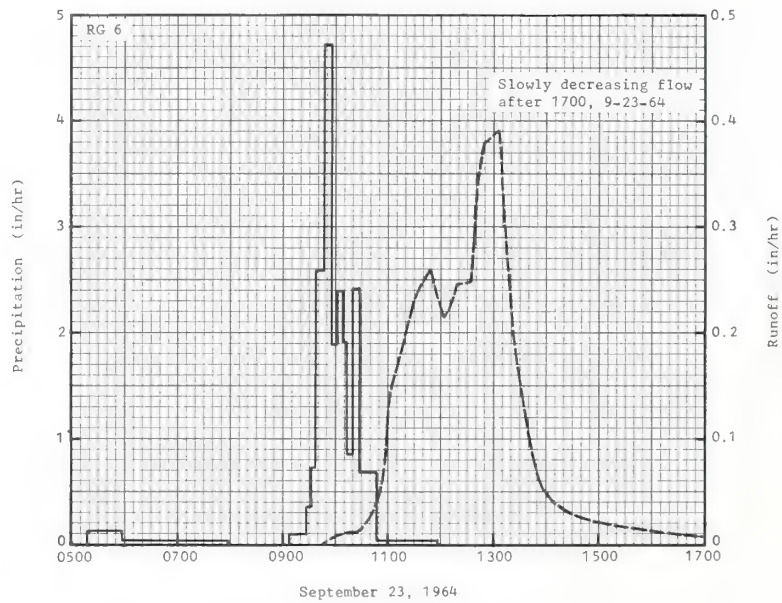
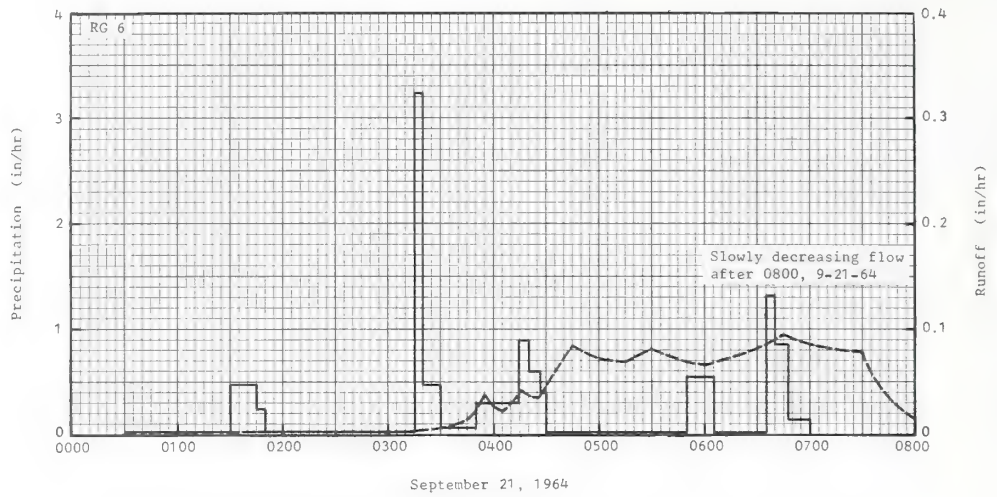
1964-65			SELECTED RUNOFF EVENTS				SONORA, TEXAS		WATERSHED S-11				70.04
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF						
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in./hr.)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE $\frac{1}{}$ (in./hr.)	ACC. (inches)			
Event of September 23, 1964 - Continued													
			9-23	0945	1.20	.45							
				0955	.84	.59							
				1000	2.88	.83							
				1005	1.68	.97							
				1010	1.56	1.10							
				1030	1.35	1.55							
				1035	.96	1.63							
				1040	.60	1.68							
				1050	.42	1.75							
				1100	.18	1.78							
				1110	.06	1.79							
				RG	5	2.78							
				RG	7	1.65							
				RG	9	2.15							
				RG	10	1.81							
				RG	11	1.84							
				7 RG	AVG. $\frac{2}{}$	2.22							
Event of May 16, 1965													
4-25	.01	.0000	5-16	RG	6		5-16	1000	.0000	.0000			
4-26	1.10	.0000		0026	.00	.00		1015	.0106	.0027			
5-10	.26	.0000		0036	.12	.02		1030	.1150	.0314			
5-14	.08	.0000		0056	.09	.05		1045	.0418	.0418			
5-15	.02	.0000		0726	T	.08		1100	.0391	.0516			
Watershed conditions: Caliche roads - 0.4%; rangeland - 99.6%. Fair range condition - 83% of the area; poor condition - 17%.													
				0736	.84	.22		1115	.0402	.0617			
				0741	3.12	.48		1130	.0348	.0704			
				0746	2.28	.67		1145	.0367	.0796			
				0751	1.44	.79		1200	.0323	.0876			
				0801	.72	.85		1215	.0350	.0964			
				0806	2.16	1.03		1230	.0296	.1038			
				0816	1.56	1.29		1245	.0226	.1095			
				0826	2.16	1.65		1300	.0187	.1141			
				0836	2.10	2.00		1330	.0132	.1208			
				0846	.84	2.14		1345	.0095	.1231			
				0856	.30	2.19		1415	.0065	.1267			
				0906	.12	2.21		1445	.0056	.1297			
				1026	.06	2.24		1515	.0044	.1320			
				1056	.10	2.29		1545	.0035	.1338			
								1645	.0020	.1362			
				RG	8								
			5-15	2310	.00	.00		1915	.0009	.1390			
				2400	.02	.02		2045	T	.1397			
			5-16	0030	.00	.02		2200	.0000	.1397			
				0040	.06	.03							
				0725	.00	.03							
				0730	.48	.07							
				0800	2.04	.75							
				0806	4.80	1.23							
				0811	1.44	1.35							
				0820	2.80	1.77							
				0830	1.68	2.05							
				0840	1.20	2.25							
				0850	.96	2.41							
				0910	.93	2.72							
				1020	.05	2.78							
				1040	.18	2.84							
				1150	.03	2.87							
				RG	5	2.29							
				RG	7	2.27							
				RG	9	3.09							
				RG	10	3.57							
				RG	11	3.22							
				7 RG	AVG. $\frac{2}{}$	2.67							

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 10,876.86. $\frac{1}{}$ RUNOFF RATE SHOWN IS THE AVERAGE RATE IN IN/HR FOR THE PRECEDING TIME INTERVAL DETERMINED FROM THE ACCUMULATION DATA AS COMPUTED FROM THE RESERVOIR STAGE-VOLUME CURVE AND SPILLWAY FLOW RATING. $\frac{2}{}$ THIESSEN WEIGHTED RAINFALL USING RAIN GAGES 5, 6, 7, 8, 9, 10, AND 11.

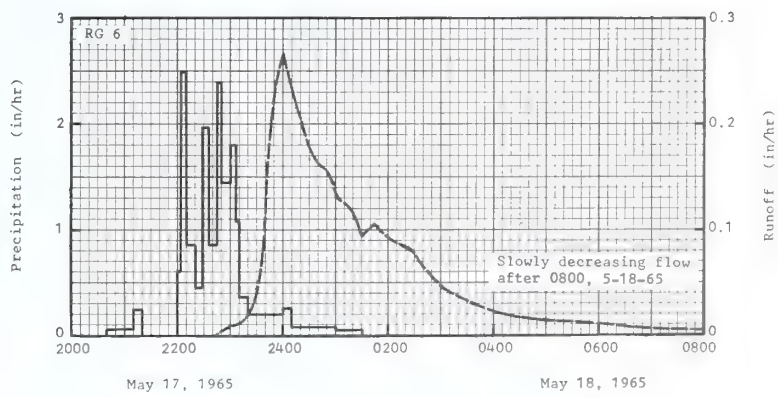
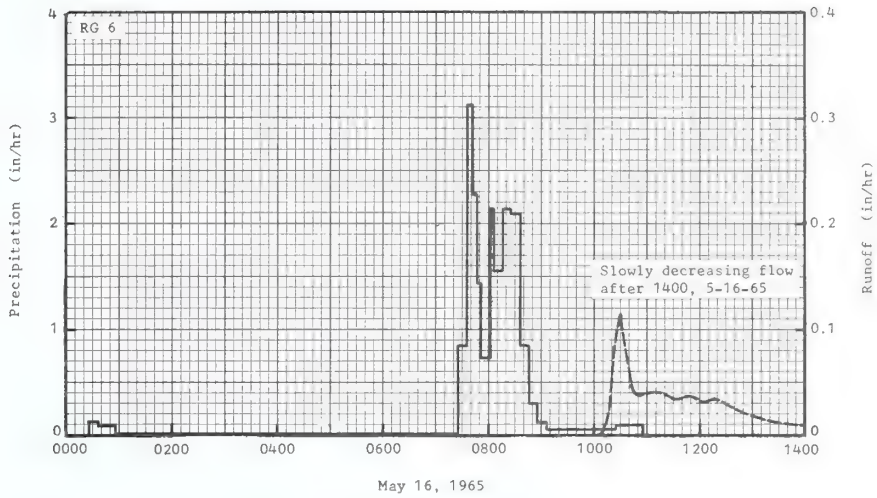
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 10,876.86. $\frac{1}{}$ RUNOFF RATE SHOWN IS THE AVERAGE RATE IN IN/HR FOR THE PRECEDING TIME INTERVAL DETERMINED FROM THE ACCUMULATION DATA AS COMPUTED FROM THE RESERVOIR STAGE-VOLUME CURVE AND SPILLWAY FLOW RATING. $\frac{2}{}$ THIENEN WEIGHTED RAINFALL USING RAIN GAGES 5, 6, 7, 8, 9, 10, AND 11.

1965 SELECTED RUNOFF EVENTS			SONORA, TEXAS				WATERSHED S-11 70.04			
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE $\frac{1}{2}$ (in/hr)	ACC. (inches)
			Event of May 17-18, 1965							
4-25	7 RG $\frac{2}{2}$.01	.0000	5-17	RG	.6		5-17	2245	.0000	.0000
4-26	1.10	.0000		2040	.00	.00		2300	.0077	.0019
5-10	.26	.0000		2110	.04	.02		2315	.0130	.0052
5-14	.08	.0000		2120	.24	.06		2330	.0407	.0154
5-15	.02	.0000		2200	.00	.06		2345	.1745	.0590
5-16	2.68	.1397		2203	.60	.09		2400	.2667	.1257
Watershed conditions: Caliche roads - 0.4%; rangeland - 99.6%. Fair range condition - 83% of the area; poor condition - 17%.				2210	2.49	.38	5-18	0015	.2171	.1500
				2220	.84	.52		0030	.1673	.2218
				2228	.45	.58		0045	.1590	.2615
				2235	1.97	.81		0100	.1312	.2944
				2245	.84	.95		0115	.1213	.3247
				2250	2.40	1.15		0130	.0942	.3482
				2300	1.44	1.39		0145	.1049	.3744
				2305	1.80	1.54		0200	.0906	.3971
				2310	1.08	1.63		0215	.0869	.4188
				2320	.36	1.69		0230	.0775	.4382
				2400	.20	1.82		0300	.0477	.4659
			5-18	0010	.24	1.86		0330	.0319	.4841
				0100	.08	1.93		0400	.0224	.4972
				0130	.06	1.96		0430	.0178	.5060
				$\frac{3}{3}$ 0300	.01	1.97		0500	.0140	.5131
				RG	.8			0545	.0101	.5212
			5-17	2055	.00	.00		0645	.0059	.5277
				2215	.06	.02		0745	.0038	.5321
				2220	.48	.06		0915	.0032	.5355
				2227	2.66	.37		1015	.0026	.5368
				2235	1.13	.52		1115	.0024	.5380
				2240	6.24	1.04		1215	.0012	.5398
				2245	5.16	1.47		1330	.0000	.5406
				2250	4.08	1.81				
				2255	1.80	1.96				
				2300	4.32	2.32				
				2305	2.64	2.54				
				2310	.24	2.56				
				2400	.16	2.69				
			5-18	0100	.60	2.75				
				$\frac{3}{3}$ 0200	.01	2.76				
				RG	.5	2.10				
				RG	.7	1.82				
				RG	.9	2.14				
				RG	.10	1.57				
				RG	.11	2.35				
				7 RG	AVG. $\frac{2}{2}$	2.21				

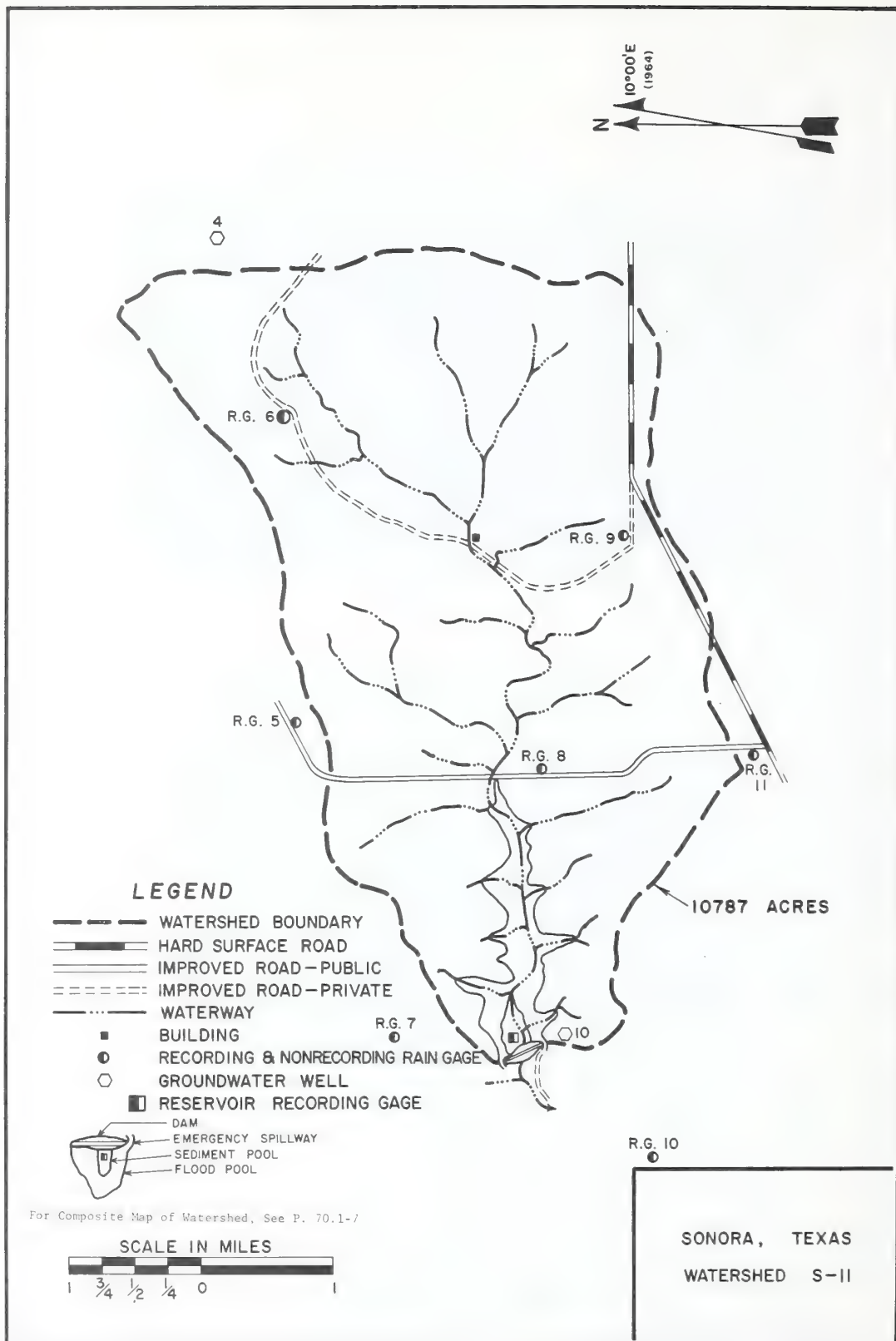
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 10,876.86. $\frac{1}{2}$ RUNOFF RATE SHOWN IS THE AVERAGE RATE IN IN/HR FOR THE PRECEDING TIME INTERVAL DETERMINED FROM THE ACCUMULATION DATA AS COMPUTED FROM THE RESERVOIR STAGE-VOLUME CURVE AND SPILLWAY FLOW RATING. $\frac{2}{2}$ THIESSEN WEIGHTED RAINFALL USING RAIN GAGES 5, 6, 7, 8, 9, 10, AND 11. $\frac{3}{3}$ RAINFALL BETWEEN 1130 AND 2000 ON 5-18 AMOUNTED TO 0.09 INCH (THIESSEN WEIGHTED) BUT DID NOT CAUSE RUNOFF.



SONORA, TEXAS WATERSHED S-11



SONORA, TEXAS WATERSHED S-11



SONORA, TEXAS WATERSHED S-12

LOCATION: Sutton County, Tex.; gaging station on flood detention reservoir, 2 miles northeast of Sonora, Lowrey Draw, East Fork Devils River, Devils River, Rio Grande River Basin.

AREA: 2,801 acres (4.38 sq. miles)

SLOPES:	Slope—Percent	0-3	3-8
	Percent of area	30	70

SOILS: Residual, derived from highly calcareous limestones.

Type	Per- cent of area	Topsoil			Subsoil		Substratum		Internal drainage
		Avg. depth (in.)	Structure	Perme- ability	Structure	Perme- ability	Avg. depth to(in.)	Perme- ability	
Tarrant stony clay	79	5	Strong medium to fine granular	Moderate	-----	-----	5	Moderately slow	Rapid
Kavett clay	14	9	Moderate to strong very fine subangular blocky	Moderate	Moderate very fine subangular blocky	Moderate	16	Moderate	Slow
Knippa clay	6	10	Moderate medium granular	Moderate	Weak very fine blocky	Moderate	24	Moderate	Medium
Tobosa clay	1	10	Strong coarse granular	Moderately slow	Weak medium blocky	Very slow	30	Very slow	Very slow

EROSION:	Erosion class	1	2
	Percent of area	7	93

LAND CAPABILITY:	Class	I	II	III	IV	V	VI
	Percent of area	0	0	6	15	0	79

GEOLOGY: Edwards and associated limestones of Lower Cretaceous age. Thin beds of hard limestone with thicker beds of marly limestone occur on the plateau, 10 percent of the area, thickness 0 to 20 ft. Marly limestone outcrops on 13 percent of the area where the plateau slopes steepen, thickness 0 to 25 ft. Alternating beds of hard limestone and marly limestone outcrop on the middle slopes, 21 percent of the area, thickness 0 to 20 ft. The lower 52 percent of the watershed, on steeper slopes, hard limestone jointed and cavernous, thickness 20 to 70 ft. Alluvium and colluvium along stream channels occur on 4 percent of the area. All strata, strike N26°W, dip S54°W at 4.5 feet per mile. For distribution of formations, see geology map of watershed W-14, page 70.1-8. Source of data: Geology and Groundwater Studies in Part of the Edwards Plateau of Texas, Including Sutton and Adjacent Counties, U. S. Dept. Agr., ARS 41-103, April 1966.

SURFACE DRAINAGE: Good; most of drainage well defined; principal drainageway 3 miles long with intersecting drainageway 1.5 miles long and numerous well defined side drainages.

CHARACTER OF FLOW: Ephemeral, continuous.

INSTRUMENTATION: Runoff: Stripchart waterstage recorder with bubbler gage on flood detention reservoir with detailed topographic map of flood pool, 9.6 inches per day chart speed. Precipitation: 5 weighing-recording rain gages, 12-hr. time scale.

WATERSHED CONDITIONS: Paved roads - 0.2 percent; rangeland - 99.8 percent. Rangeland moderately to severely overgrazed depending on climatic conditions. Reconnaissance type survey made 1963-65 based on percent of climax vegetation present.

Range condition	Low Poor	Poor	High Poor	Low Fair	Fair
Percent climax vegetation	0-8	9-17	18-25	26-34	35-42
Percent of area, 1963	9.1	--	--	78.0	12.9
Percent of area, 1964	27.2	--	--	--	72.8
Percent of area, 1965	39.5	--	--	43.8	16.7

GENERALLY REPRESENTS: Upland, low stony hills, and alluvium range sites of the Edwards Plateau land resource area (I-81) in southwest Texas.

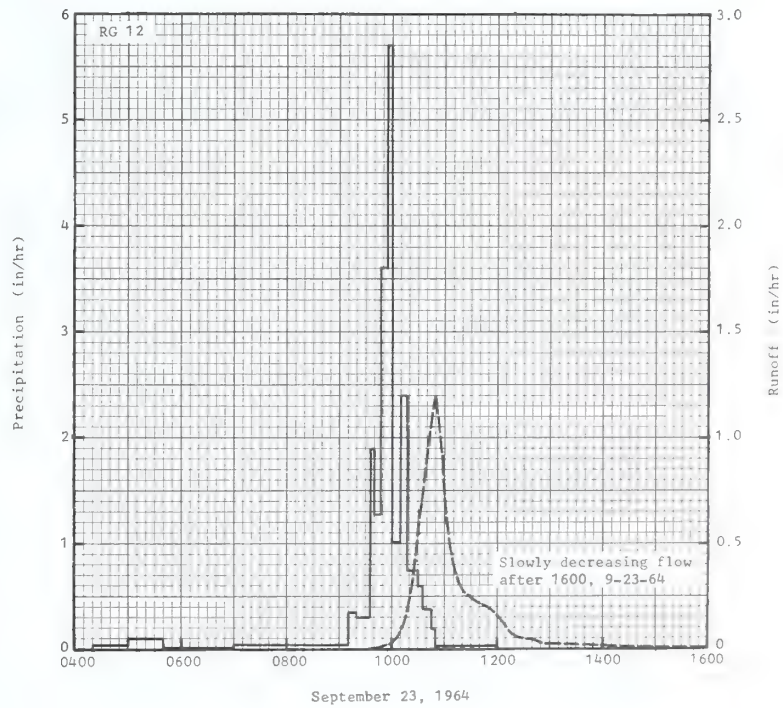
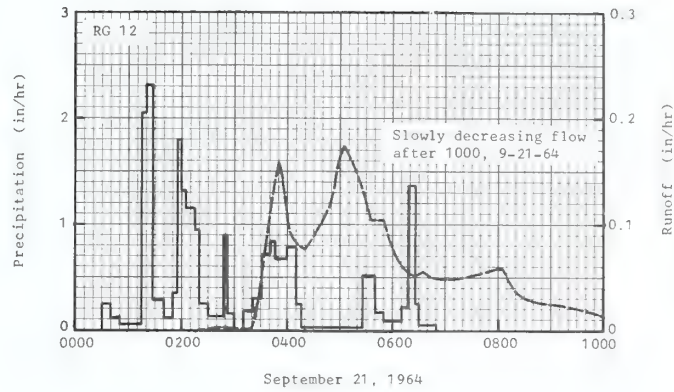
MONTHLY PRECIPITATION AND RUNOFF (inches)						SONORA, TEXAS		WATERSHED S-12					70.05			
						AREA — 2,801 ACRES (4.38 SQ. MILES)										
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1961 P ¹ / _Q						5.58 .10E	3.82 .09E	.68 .00	2.01 .00	3.28 .02E	1.01 .00	.21 .00	16.59 .21E			
1962 P ¹ / _Q	.13 .00	.43 .00	.31 .00	3.99 T	.91 T	3.11 T	.02 .00	.27 .00	5.13 .01	1.56 T	1.01 .00	.30 .00	17.17 .01			
1963 P ¹ / _Q	.07 .00	.84 .00	.06 .00	1.27 .00	4.79 T	1.12 .00	.68 .00	.92 .00	1.82 T	.82 T	2.59 T	.66 .00	15.64 T			
1964 P ¹ / _Q	2.11 T	1.31 .00	1.37 .00	1.38 .00	2.41 T	.53 .00	3.45 .11	1.99 .00	9.30 1.62	1.57 .00	.39 .00	.68 .00	26.49 1.73			
1965 P ¹ / _Q	1.46 .00	2.70 .00	.22 .00	1.12 .00	7.73 1.37	1.10 T	1.58 .00	.92 T	1.13 .00	.97 .00	.21 .00	1.08 .00	20.22 1.37			
1966 P ¹ / _Q	.77 .00	1.21 .00	.89 .00	4.98 .21	2.10 .00	.98 .00	1.11 T	3.21 T	3.85 .00	1.31 .00	.12 .00	.07 .00	20.60 .21			
1967 P ¹ / _Q	.04 .00	.44 .00	.77 .00	1.70 T	2.88 T	2.10 T	2.68 .00	.57 .00	5.60 .00	1.39 .00	2.85 .00	1.29 .00	22.31 T			
STA AVG ² / _P (62-67) Q	.76 T	1.16 .00	.60 .00	2.41 .04	3.47 .23	1.49 T	1.59 .02	1.31 T	4.47 .27	1.27 T	1.20 T	.68 .00	20.41 .56			
MEAN P ² / _{45 YR}	1.01	1.02	.96	1.69	2.88	2.74	2.08	1.75	3.08	2.17	.69	1.21	21.48			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1961 ² / _Q	6-18	.16E	6-18	.09E	6-18	.10E	6-18	.10E	6-18	.10E	6-18	.10E	6-18	.10E	6-18	.10E
1962	9-7	.02	9-7	.01	9-7	.01	9-7	.01	9-7	.01	9-7	.01	9-7	.01	9-7	.01
1963	11-8	T	9-12	T	9-12	T	9-12	T	9-12	T	9-12	T	9-12	T	9-12	T
1964	9-23	1.20	9-23	.79	9-23	1.00	9-23	1.08	9-23	1.09	9-23	1.09	9-23	1.15	9-19	1.62
1965	5-16	.83	5-16	.58	5-16	.78	5-16	.84	5-16	.84	5-16	.84	5-16	.85	5-16	1.37
1966	4-30	.27	4-30	.12	4-30	.16	4-30	.20	4-30	.21	4-30	.21	4-30	.21	4-24	.21
1967	4-17	.02	4-17	T	4-17	T	4-17	T	4-17	T	4-17	T	4-17	T	4-17	T
MAXIMUMS FOR PERIOD OF RECORD																
1961 To 1967	9-23 1964	1.20	9-23 1964	.79	9-23 1964	1.00	9-23 1964	1.08	9-23 1964	1.09	9-23 1964	1.09	9-23 1964	1.15	9-19 1964	1.62
NOTES: Watershed conditions: Paved roads - 0.2 percent of the area; rangeland - 99.8 percent. Range conditions poor to fair, with moderate to severe overgrazing during a year depending on climatic conditions and stocking rates. ¹ / Thiessen weighted rainfall using rain gages 8, 10, 11, 12, and 13. ² / Precipitation and runoff records began May 1961: part-year amounts not included in averages. ³ / Mean P based on 45-yr. (1923-67) record period at the Texas Agricultural Experiment Station, Substation No. 14, approximately 18 miles south of Sonora, Tex. ⁴ / From personal observation, no runoff occurred in 1961 prior to June.																
1964 SELECTED RUNOFF EVENTS						SONORA, TEXAS		WATERSHED S-12					70.05			
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in./hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE ⁵ / _(in./hr)	ACC. (inches)						
Event of September 21, 1964																
8-22	5 RG 6/ .26	.0000	9-21	RG	12		9-21	0220	.0000	.0000						
8-24	.11	.0000		0030	.00	.00		0235	.0003	.0001						
9-11	.20	.0000		0040	.24	.04		0250	.0020	.0006						
9-12	T	.0000		0050	.12	.06		0305	.0005	.0007						
9-13	.56	.0000		0115	.05	.08		0320	.0005	.0008						
9-14	.20	.0000		0120	2.04	.25		0335	.0762	.0199						
9-19	2.06	.0008		0127	2.31	.52		0350	.1590	.0596						
9-20	.67	.0002		0140	.28	.58		0405	.0875	.0815						
Watershed conditions: Paved roads - 0.2% of the area; rangeland - 99.8%. Range conditions - poor to fair.				0150	.12	.60		0420	.0767	.1006						
				0155	.36	.63		0435	.0992	.1255						
				0200	1.80	.78		0450	.1215	.1558						
				0205	1.32	.89		0505	.1724	.1989						
				0215	1.14	1.08		0520	.1447	.2351						
				0220	.96	1.16		0535	.1028	.2608						
				0230	.24	1.20		0550	.1029	.2866						
				NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 2824.33. ⁵ / RUNOFF RATE SHOWN IS THE AVERAGE RATE IN IN/HR FOR THE PRECEDING TIME INTERVAL DETERMINED FROM THE ACCUMULATION DATA AS COMPUTED FROM THE RESERVOIR STAGE-VOLUME CURVE AND SPILLWAY FLOW RATING. ⁶ / THIESSEN WEIGHTED RAINFALL USING RAIN GAGES 8, 10, 11, 12, AND 13.												

1964-65 SELECTED RUNOFF EVENTS			SONORA, TEXAS				WATERSHED S-12				70.05
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE ^{1/} (in/hr)	ACC. (inches)	
Event of September 21, 1964 - Continued											
			9-21	0248	.13	1.24	9-21	0605	.0691	.3038	
				0252	.90	1.30		0620	.0520	.3164	
				0300	.15	1.32		0635	.0536	.3302	
				0310	.00	1.32		0650	.0492	.3425	
				0320	.18	1.35		0705	.0490	.3548	
				0330	.30	1.40		0735	.0512	.3803	
				0340	.72	1.52		0805	.0565	.4086	
				0345	.84	1.59		0820	.0352	.4174	
				0400	.68	1.76		0850	.0263	.4305	
				0410	.78	1.89		0950	.0172	.4461	
				0415	.24	1.91		1020	.0051	.4487	
				0525	.03	1.94		1120	.0034	.4521	
				0540	.52	2.07		1200	.0017	.4543	
				0550	.18	2.10		1300	.0000	.4543	
				0610	.09	2.13					
				0618	.22	2.16					
				0625	1.37	2.32					
				0630	.24	2.34					
				0650	.06	2.36					
				RG	8	1.85					
				RG	10	1.84					
				RG	11	1.68					
				RG	13	1.96					
				5 RG	AVG. 2/	2.04					
			Event of September 23, 1964								
	5 RG 2/			RG	12		9-23	0920	.0000	.0000	
8-24	.11	.0000		0420	.00	.00		0935	.0012	.0003	
9-11	.20	.0000	9-23	0500	.03	.02		0950	.0161	.0043	
9-12	T	.0000		0540	.10	.09		1005	.0532	.0176	
9-13	.56	.0000		0700	.01	.10		1035	.7358	.3843	
9-14	.20	.0000									
9-19	2.06	.0008		0910	.03	.17		1050	1.1961	.6833	
9-20	.67	.0002		0920	.36	.23		1105	.5049	.8096	
9-21	2.09	.4543		0934	.30	.30		1120	.2788	.8793	
9-22	.47	.0187		0940	1.90	.49		1135	.2254	.9356	
				0948	1.28	.66		1150	.2007	.9858	
				0954	3.60	1.02		1205	.1327	1.0190	
				1000	5.70	1.59		1220	.0644	1.0351	
				1010	1.02	1.76		1235	.0459	1.0466	
				1018	2.40	2.08		1250	.0324	1.0547	
				1030	.75	2.23		1335	.0213	1.0706	
				1036	.60	2.29		1350	.0119	1.0736	
				1044	.38	2.34		1450	.0045	1.0771	
				1050	.20	2.36		1650	.0015	1.0801	
				1200	.03	2.39		1800	.0000	1.0801	
				RG	8	1.79					
				RG	10	1.81					
				RG	11	1.84					
				RG	13	1.67					
				5 RG	AVG. 2/	2.06					
			Event of May 15-16, 1965								
4-25	.03	.0000		RG	12		5-16	0800	.0000	.0000	
4-26	1.07	.0000	5-15	2315	.00	.00		0815	.0280	.0070	
5-10	.43	.0000		2335	.15	.05		0830	.0516	.0199	
5-14	.07	.0000		2400	.00	.05		0845	.1622	.0605	
			5-16	0020	.00	.05		0900	.2704	.1281	
				0025	.36	.08		0915	.3343	.2116	
				0030	1.44	.20		0930	.4510	.3244	
				0200	.00	.20		0945	.5403	.4595	
				0300	.01	.21		1000	.8300	.6670	
				0600	.00	.21		1015	.4958	.7909	
Continued on next page											
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 2.824.33. 1/ RUNOFF RATE SHOWN IS THE AVERAGE RATE IN IN/HR FOR THE PRECEDING TIME INTERVAL DETERMINED FROM THE ACCUMULATION DATA AS COMPUTED FROM THE RESERVOIR STAGE-VOLUME CURVE AND SPILLWAY FLOW RATING. 2/ THIESSEN WEIGHTED RAINFALL USING RAIN GAGES 8, 10, 11, 12, AND 13.											

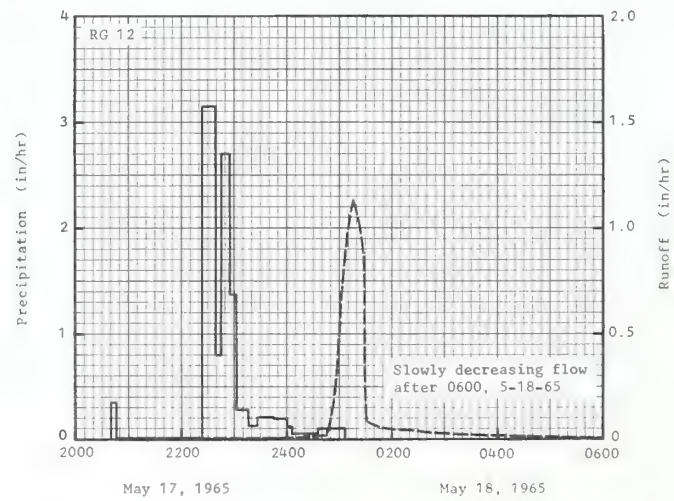
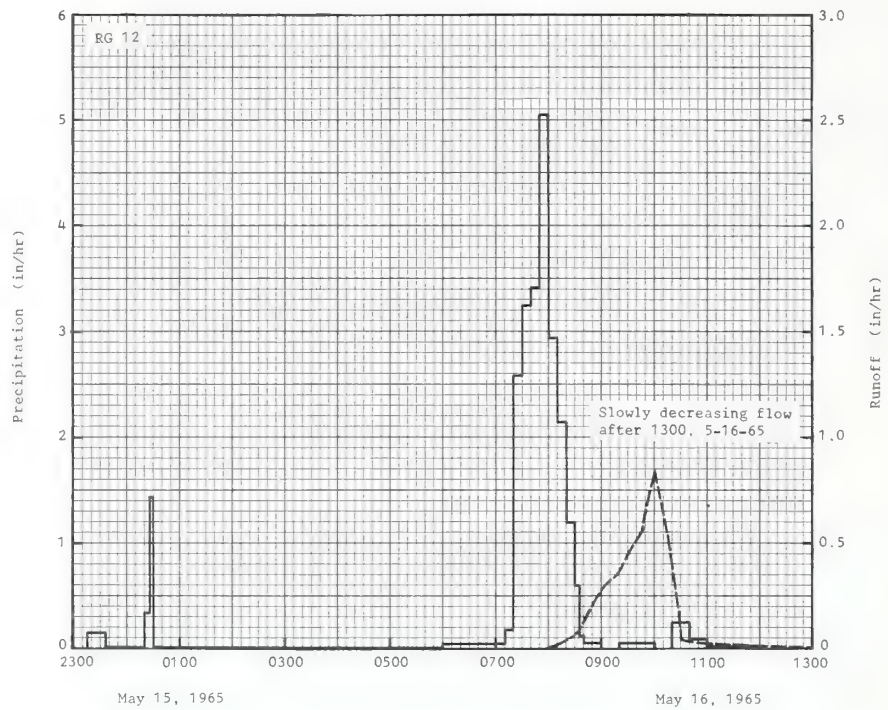
1965			SONORA, TEXAS				WATERSHED S-12				70.05
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in./hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE $\frac{1}{}$ (in./hr)	ACC. (inches)	
Event of May 15-16, 1965 - Continued											
			5-16	0710	.03	.24	5-16	1030	.0431	.8017	
				0720	.18	.27		1045	.0320	.8097	
				0730	2.58	.70		1115	.0228	.8211	
				0740	3.24	1.24		1130	.0192	.8259	
				0750	3.42	1.81		1145	.0153	.8297	
				0800	5.04	2.65		1200	.0147	.8334	
				0810	2.94	3.14		1215	.0091	.8357	
				0820	2.16	3.50		1230	.0069	.8374	
				0830	1.20	3.70		1245	.0035	.8383	
				0835	.60	3.75		1300	T	.8383	
				0840	.12	3.76		1330	.0000	.8383	
				0900	.06	3.78					
				0920	.00	3.78					
				1000	.06	3.82					
				1020	.00	3.82					
				1040	.24	3.90					
				1100	.09	3.93					
				1200	.01	3.94					
				RG	8	2.87					
				RG	10	3.57					
				RG	11	3.22					
				RG	13	2.45					
				5 RG	AVG. $\frac{2}{}$	3.64					
Event of May 17-18, 1965											
4-25	5 RG $\frac{2}{}$.03	.0000	5-17	RG	12		5-17	2215	.0000	.0000	
4-26	1.07	.0000		2040	.00	.00		2245	.0023	.0012	
5-10	.43	.0000		2045	.36	.03		2315	.0041	.0032	
5-14	.07	.0000		2223	.01	.04		2330	.0046	.0044	
5-15	.05	.0000		2239	3.15	.88		2345	.0064	.0060	
5-16	3.60	.8383	5-18	2245	.80	.96	5-18	2400	.0066	.0076	
Watershed conditions: Roads - 0.2% of the area; rangeland - 99.8%. Poor range conditions - 40% of the area, fair conditions - 60%.				2255	2.70	1.41		0015	.0093	.0099	
				2302	1.37	1.57		0030	.0112	.0127	
				2315	.28	1.63		0045	.0147	.0164	
				2325	.12	1.65		0100	.4577	.1308	
				2345	.21	1.72		0115	1.1308	.4135	
				2400	.20	1.77		0130	.0842	.4345	
				0005	.12	1.78		0145	.0530	.4478	
				0035	.06	1.81		0200	.0436	.4587	
				$\frac{3}{}$ 0105	.10	1.86		0215	.0378	.4676	
				RG	8	2.76		0245	.0219	.4786	
				RG	10	1.57		0315	.0196	.4884	
				RG	11	2.33		0345	.0162	.4965	
				RG	13	1.21		0415	.0051	.4990	
				5 RG	AVG. $\frac{2}{}$	1.84		0445	.0051	.5016	
								0515	.0035	.5033	
								0545	.0029	.5048	
						0615	.0000	.5048			

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 2824.33. $\frac{1}{}$ RUNOFF RATE SHOWN IS THE AVERAGE RATE IN IN/HR FOR THE PRECEDING TIME INTERVAL DETERMINED FROM THE ACCUMULATION DATA AS COMPUTED FROM THE RESERVOIR STAGE-VOLUME CURVE AND SPILLWAY FLOW RATING. $\frac{2}{}$ THIESSEN WEIGHTED RAINFALL USING RAIN GAGES 8, 10, 11, 12, AND 13. $\frac{3}{}$ RAINFALL BETWEEN 0700 AND 2000 ON 5-18 AMOUNTED TO 0.21 INCH (THIESSEN WEIGHTED) BUT DID NOT CAUSE RUNOFF.

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 2824.33. 1/ RUNOFF RATE SHOWN IS THE AVERAGE RATE IN IN/HR FOR THE PRECEDING TIME INTERVAL DETERMINED FROM THE ACCUMULATION DATA AS COMPUTED FROM THE RESERVOIR STAGE-VOLUME CURVE AND SPILLWAY FLOW RATING. 2/ THIESSEN WEIGHTED RAINFALL USING RAIN GAGES 8, 10, 11, 12, AND 13. 3/ RAINFALL BETWEEN 0700 AND 2000 ON 5-18 AMOUNTED TO 0.21 INCH (THIESSEN WEIGHTED) BUT DID NOT CAUSE RUNOFF.

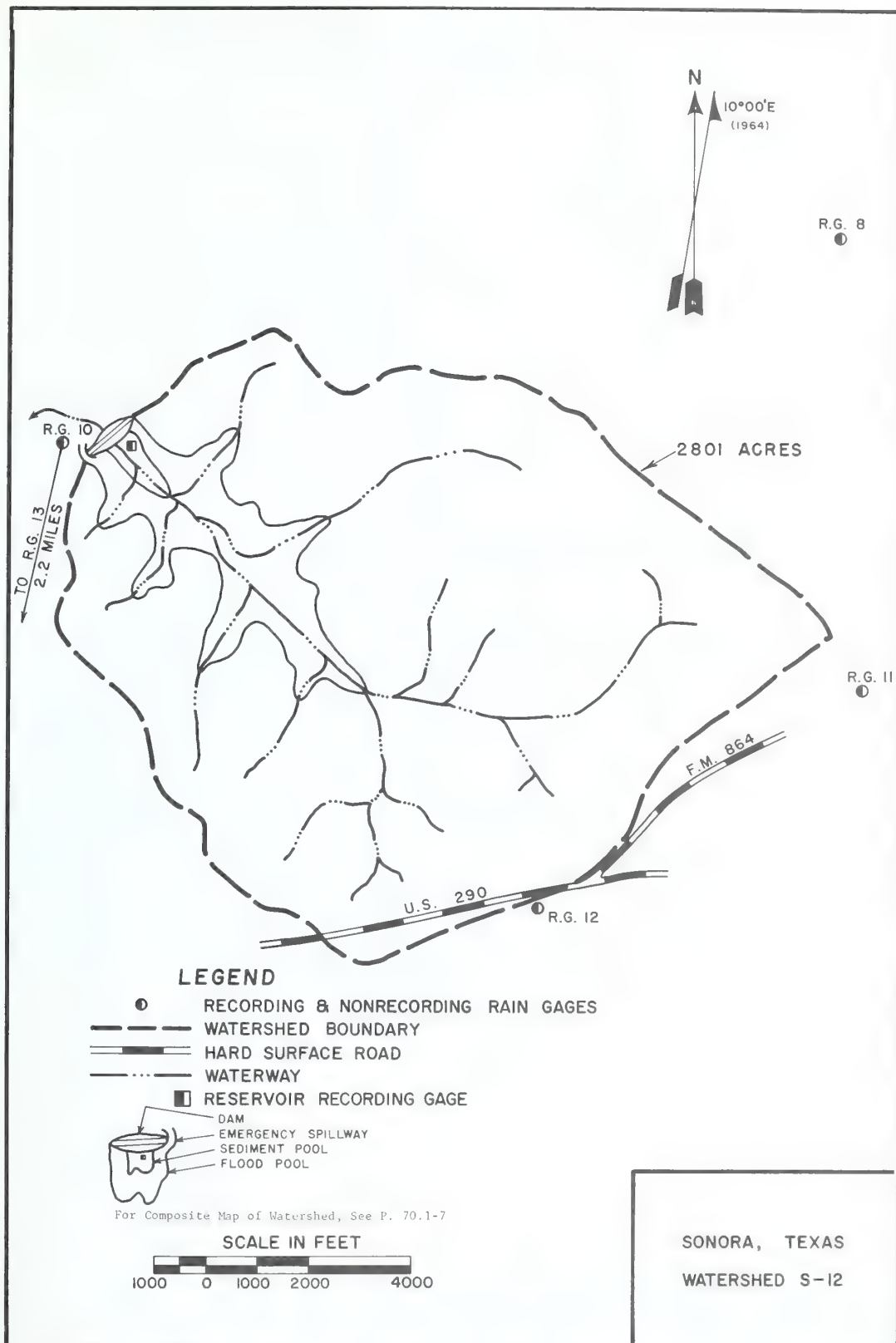


SONORA, TEXAS WATERSHED S-12



SONORA, TEXAS

WATERSHED S-12



SONORA, TEXAS WATERSHED S-13

LOCATION: Sutton County, Tex.; gaging station on flood detention reservoir, 0.5 miles southeast of Sonora; Lowrey Draw, East Fork Devils River, Devils River, Rio Grande River Basin.

AREA: 686 acres (1.07 sq. miles)

<u>SLOPES:</u>	Slope—Percent	0-3	3-8	8-20
	Percent of area	10	87	3

SOILS: Residual, derived from highly calcareous limestones.

Type	Per- cent of area	Topsoil			Subsoil		Substratum		Internal drainage
		Avg. depth (in.)	Structure	Perme- ability	Structure	Perme- ability	Avg. depth to(in.)	Perme- ability	
Tarrant stony clay	90	5	Strong medium to fine granular	Moderate	-----	-----	5	Moderately slow	Rapid
Knippa clay	10	10	Moderate medium granular	Moderate	Weak very fine blocky	Moderate	24	Moderate	Medium

<u>EROSION:</u>	Erosion class	1	2
	Percent of area	10	90

<u>LAND CAPABILITY:</u>	Class	I	II	III	IV	V	VI
	Percent of area	0	0	10	0	0	90

GEOLOGY: Edwards and associated limestones of Lower Cretaceous age. Alternating beds of hard limestone and marly limestone outcrop on the middle slopes, 21 percent of the area, thickness 0 to 20 ft. The lower 77 percent of the watershed, on steeper slopes, hard limestone jointed and cavernous, thickness 20 to 70 feet. Alluvium and colluvium along stream channels occur on 2 percent of the area. All strata, strike N26°W, dip S54°W at 4.5 feet per mile. For distribution of formations, see geology map of watershed W-14, page 70.1-8. Source of data: Geology and Groundwater Studies in Part of the Edwards Plateau of Texas, Including Sutton and Adjacent Counties, U. S. Dept. Agr., ARS 41-103, April 1966.

SURFACE DRAINAGE: Good; drainage well defined; principal drainageway 1.5 miles long with an intersecting drainageway 0.5 mile long.

CHARACTER OF FLOW: Ephemeral, continuous.

INSTRUMENTATION: Runoff: Stripchart waterstage recorder with bubbler gage on flood detention reservoir with detailed topographic map of flood pool, 9.6 inches per day chart speed. Precipitation: 2 weighing-recording rain gages, 12-hr. time scale.

WATERSHED CONDITIONS: Paved roads - 1.5 percent; rangeland - 98.5 percent. Rangeland moderately to severely overgrazed depending on climatic conditions. Reconnaissance type survey made 1963-65 based on percent of climax vegetation present.

Range condition	Low Poor	Poor	High Poor	Low Fair	Fair
Percent climax vegetation	0-8	9-17	18-25	26-34	35-42
Percent of area, 1963	79.8	--	--	--	20.2
Percent of area, 1964	--	36.8	--	--	63.2
Percent of area, 1965	55.8	--	--	--	44.2

GENERALLY REPRESENTS: Low stony hills and alluvium range sites of the Edwards Plateau land resource area (I-81) in southwest Texas.

MONTHLY PRECIPITATION AND RUNOFF (inches)						SONORA, TEXAS		WATERSHED S-13				70.06				
						AREA — 686 ACRES (1.07 SQ. MILES)										
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1961	p ¹ / _Q						5.28 T	3.74 .00	.46 .00	2.03 .00	3.55 .06	1.18 .00	.12 .00	16.36 .06		
1962	p ¹ / _Q	.11 .00	.42 .00	.30 .00	4.12 .03	1.06 T	3.98 .02	.28 .00	.55 .00	5.19 .07	1.66 T	1.01 T	.30 .00	18.98 .12		
1963	p ¹ / _Q	.06 .00	.87 .00	T .00	1.27 .00	4.74 .02	1.06 T	.27 .00	.46 .00	2.55 .02	.57 T	2.53 .03	.68 .00	15.06 .07		
1964	p ¹ / _Q	2.20 .01	1.32 T	1.12 T	1.18 T	2.88 .02	.33 T	2.96 .01	2.09 T	8.67 .85	1.42 T	.41 .00	.78 .00	25.36 .89		
1965	p ¹ / _Q	1.80 T	2.84 T	.19 T	.85 T	6.60 .48	1.19 T	.47 .00	1.13 T	.94 .00	1.07 T	.24 .00	1.20 T	18.52 .48		
1966	p ¹ / _Q	.82 .00	1.54 .00	1.01 .00	5.23 .33	1.69 T	1.03 T	1.16 T	2.69 .01	2.91 .01	1.24 T	.10 .00	.02 .00	19.44 .35		
1967	p ¹ / _Q	.03 .00	.55 .00	.69 T	1.59 .01	2.69 .01	1.51 T	2.22 T	1.42 T	4.91 .01	1.14 .00	2.87 T	1.36 .00	20.98 .03		
STA AVG ² / _P (62-67) Q		.84 T	1.26 T	.55 T	2.37 .06	3.28 .09	1.52 T	1.23 T	1.39 T	4.20 .16	1.18 T	1.19 T	.72 T	19.73 .31		
MEAN p ² / _{45 YR}		1.01	1.02	.96	1.69	2.88	2.74	2.08	1.75	3.08	2.17	.89	1.21	21.48		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1961 ⁴	10-10	.05E	10-10	.03E	10-10	.04E	10-10	.05E	10-10	.06E	10-10	.06E	10-10	.06E	10-10	.06E
1962	9-7	.02	9-7	.02	9-7	.02	9-7	.04	9-7	.04	9-7	.06	9-7	.06	9-7	.07
1963	11-8	.05	11-8	.03	11-8	.03	11-8	.03	11-8	.03	11-8	.03	11-8	.03	11-8	.03
1964	9-23	.77	9-23	.46	9-23	.60	9-23	.68	9-23	.68	9-23	.68	9-23	.68	9-19	.85
1965	5-16	.27	5-16	.14	5-16	.22	5-16	.25	5-16	.25	5-16	.25	5-16	.46	5-10	.46
1966	4-30	.34	4-30	.18	4-30	.24	4-30	.32	4-30	.32	4-30	.32	4-29	.33	4-23	.33
1967	5-20	.02	4-17	.01	4-17	.01	4-17	.01	4-17	.01	4-17	.01	4-17	.01	4-17	.01
MAXIMUMS FOR PERIOD OF RECORD																
1961 To 1967	9-23 1964	.77	9-23 1964	.46	9-23 1964	.60	9-23 1964	.68	9-23 1964	.68	9-23 1964	.68	9-23 1964	.68	9-19 1964	.85
NOTES: Watershed conditions: Paved roads - 1.5 percent of the area, rangeland - 98.5 percent. Range in poor to fair condition, severely overgrazed during a year depending on climatic conditions and stocking rates. ¹ / Precipitation data by Thiessen method using rain gages 12 and 13. ² / Precipitation and runoff records began May 1961; part-year amounts not included in averages. ³ / Mean P based on 45-yr. (1923-67) record period at the Texas Agricultural Experiment Station, Substation No. 14, 18 miles south of Sonora, Tex. ⁴ / From personal observation, no runoff occurred in 1961 prior to May.																
1964 SELECTED RUNOFF EVENTS						SONORA, TEXAS		WATERSHED S-13				70.06				
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE ⁵ / (in/hr)	ACC. (inches)						
Event of September 21, 1964																
8-22	2 RG 6/ .21	.0000	9-21	RG	.13		9-21	0035	.0000	.0000						
8-24	.07	.0000		0015	.00	.00		0050	.0001	.0001						
9-11	.07	.0000		0030	.04	.01		0105	.0012	.0004						
9-13	.70	.0000		0050	.12	.05		0120	.0002	.0004						
9-14	.23	.0000		0116	.02	.06		0135	.0004	.0005						
9-19	1.47	.0027		0120	1.80	.18		0150	.0053	.0019						
9-20	.61	.0007		0123	3.20	.34		0205	.0071	.0036						
Watershed conditions: Paved roads - 1.5% of the area; rangeland - 98.5%. Range condition poor to fair.				0130	1.03	.46		0220	.0104	.0062						
				0150	.09	.49		0235	.0097	.0087						
				0157	.34	.53		0250	.0118	.0116						
				0202	1.80	.68		0305	.0081	.0136						
				0212	.70	.75		0320	.0042	.0147						
				0220	1.58	.96		0335	.0020	.0152						
				0249	.12	1.02		0350	.0019	.0157						
				0310	.24	1.10		0405	.0083	.0177						
			Continued on next page													
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 691.71. ⁵ / RUNOFF RATE SHOWN IS THE AVERAGE RATE IN IN/HR FOR THE PRECEDING TIME INTERVAL DETERMINED FROM THE ACCUMULATION DATA AS COMPUTED FROM THE RESERVOIR STAGE-VOLUME CURVE AND SPILLWAY FLOW RATING. ⁶ / THIESSEN WEIGHTED RAINFALL USING RAIN GAGES 12 AND 13.																

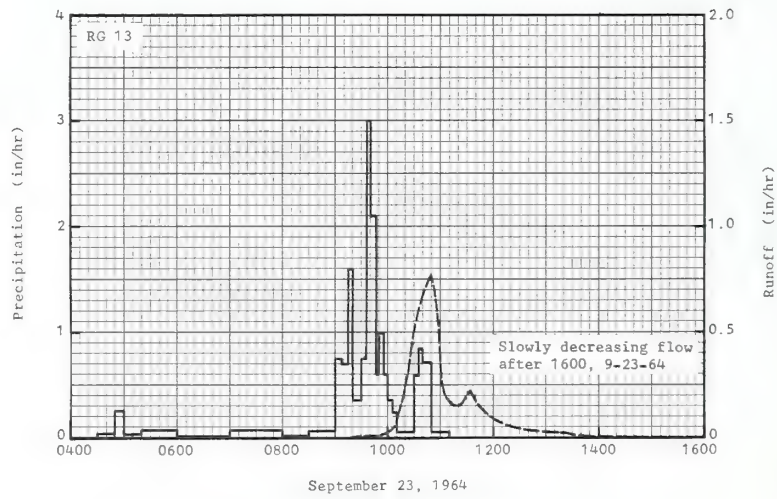
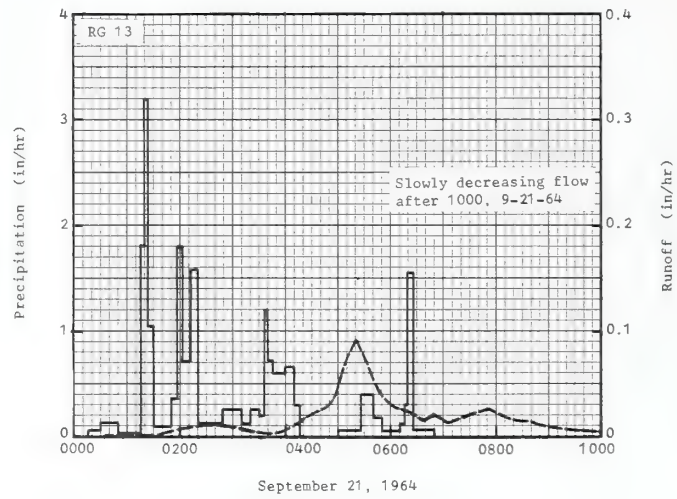
1964 SELECTED RUNOFF EVENTS			SONORA, TEXAS				WATERSHED S-13			70.06
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE $\frac{1}{2}$ (in/hr)	ACC. (inches)
Event of September 21, 1964 - Continued										
			9-21	0320	.12	1.12	9-21	0420	.0170	.0220
				0330	.24	1.16		0435	.0229	.0277
				0336	.20	1.18		0450	.0294	.0351
				0340	1.20	1.26		0505	.0656	.0515
				0345	.72	1.32		0520	.0912	.0743
				0400	.60	1.47		0535	.0628	.0900
				0410	.66	1.58		0550	.0396	.0999
				0414	.30	1.60		0605	.0288	.1071
				0500	.00	1.60		0620	.0227	.1128
				0525	.05	1.62		0635	.0154	.1166
				0540	.40	1.72		0650	.0207	.1218
				0550	.18	1.75		0705	.0123	.1249
				0610	.06	1.77		0720	.0186	.1295
				0615	.12	1.78		0735	.0213	.1348
				0619	.30	1.80		0750	.0273	.1417
				0624	1.56	1.93		0805	.0220	.1472
				0650	.07	1.96		0820	.0174	.1515
				RG	.12	2.36		0835	.0149	.1552
				2 RG	AVG. $\frac{2}{2}$	1.96		0850	.0108	.1580
								0905	.0077	.1599
								0935	.0054	.1626
								1005	.0038	.1645
								1135	.0016	.1668
								1235	.0000	.1668
Event of September 23, 1964										
	2 RG $\frac{2}{2}$		9-23	RG	1.3		9-23	0920	.0000	.0000
8-24	.07	.0000		0430	.00	.00		0935	.0101	.0025
9-11	.07	.0000		0450	.03	.01		0950	.0153	.0064
9-13	.70	.0000		0500	.24	.05		1005	.0383	.0159
9-14	.23	.0000		0520	.03	.06		1020	.2329	.0742
9-19	1.47	.0027		0600	.06	.10		1035	.6015	.2245
9-20	$\frac{3}{2}$.61	.0007		0700	.01	.11		1050	.7717	.4175
9-21	2.02	.1668		0800	.06	.17		1105	.2156	.4713
9-22	.51	.0000		0830	.02	.18		1120	.1560	.5104
				0900	.06	.21		1135	.2197	.5653
				0908	.75	.31		1150	.1250	.5965
				0914	.70	.38		1205	.0822	.6171
				0920	1.60	.54		1220	.0586	.6317
				0930	.36	.60		1235	.0431	.6425
				0934	.75	.65		1250	.0304	.6501
				0940	3.00	.95		1320	.0298	.6650
				0946	2.10	1.16		1335	.0136	.6684
				0950	.60	1.20		1405	.0080	.6724
				0956	1.00	1.30		1505	.0058	.6781
				1000	.60	1.34		1635	.0024	.6816
				1005	.36	1.37		1805	.0000	.6816
				1010	.24	1.39				
				1030	.06	1.41				
				1035	.60	1.46				
				1040	.84	1.53				
				1050	.72	1.65				
				1110	.06	1.67				
				RG	.12	2.39				
				2 RG	AVG. $\frac{2}{2}$	1.67				
Watershed conditions: Paved roads - 1.5% of the area; rangeland - 98.5%. Range condition poor to fair.										

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 691.71. $\frac{1}{2}$ RUNOFF RATE SHOWN IS THE AVERAGE RATE IN IN/HR FOR THE PRECEDING TIME INTERVAL DETERMINED FROM THE ACCUMULATION DATA AS COMPUTED FROM THE RESERVOIR STAGE-VOLUME CURVE AND SPILLWAY FLOW RATING. $\frac{2}{2}$ THIESSEN WEIGHTED RAINFALL USING RAIN GAGES 12 AND 13. $\frac{3}{2}$ ON 9-21-64, 0.06 INCH OCCURRED BETWEEN 2310 AND 2400 AND WAS NOT SHOWN ON THE EVENT OF 9-21.

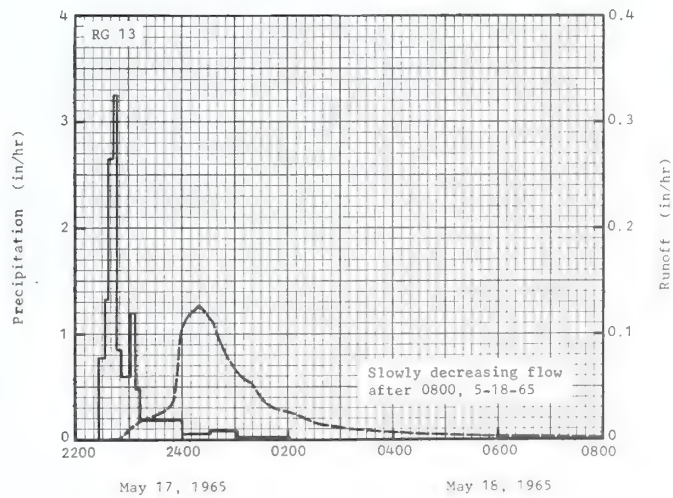
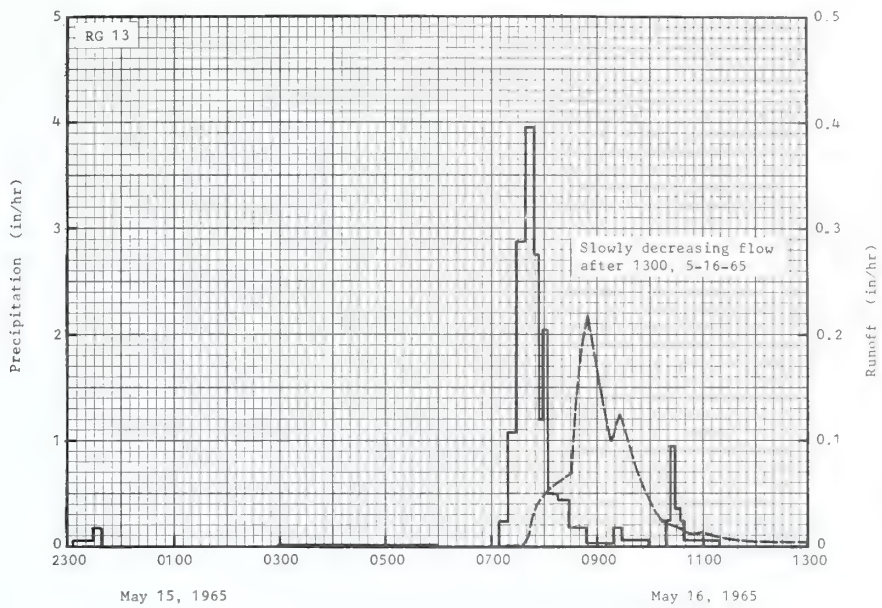
1965 SELECTED RUNOFF EVENTS			SONORA, TEXAS				WATERSHED S-13				70.06		
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF						
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE 1/ (in/hr)	ACC. (inches)			
			Event of May 15-16, 1965										
4-25	2 RG 2/ .04	.0000	5-15	RG	13		5-16	0715	.0000	.0000			
4-26	.81	.0016		2305	.00	.00		0735	.0012	.0004			
5-10	.74	.0041		2328	.05	.02		0745	.0228	.0042			
5-14	.10	.0000		2338	.18	.05		0800	.0492	.0165			
				2400	.00	.05		0815	.0600	.0315			
Watershed conditions: Paved roads - 1.5% of the area; rangeland - 98.5%. Poor range condition - 56% of the area; fair condition - 44%.			5-16	0258	.00	.05		0830	.0684	.0486			
				0558	T	.06		0850	.2187	.1215			
				0708	.01	.07		0915	.1003	.1633			
				0718	.24	.11		0925	.1248	.1841			
				0728	1.08	.29		0935	.1003	.2008			
				0738	2.88	.77		0945	.0747	.2133			
				0748	3.96	1.43		1000	.0420	.2238			
				0753	2.76	1.66		1015	.0216	.2292			
				0758	1.20	1.76		1030	.0194	.2340			
				0803	2.04	1.93		1045	.0112	.2368			
				0815	.50	2.03		1100	.0119	.2398			
				0828	.46	2.13		1115	.0088	.2420			
				0848	.18	2.19		1145	.0036	.2438			
				0918	.02	2.20		1345	.0016	.2470			
				0928	.18	2.23		1445	T	.2470			
				0958	.06	2.26		1545	.0000	.2470			
				1018	.00	2.26							
				1023	.24	2.28							
				1028	.96	2.36							
				1033	.36	2.39							
				1038	.24	2.41							
				1118	.06	2.45							
				RG	12	3.94							
				2 RG	AVG. 2/	2.46							
							Event of May 17-18, 1965						
4-25	.04	.0000	5-17	RG	13		5-17	2235	.0000	.0000			
4-26	.81	.0016		2225	.00	.00		2250	.0030	.0008			
5-10	.74	.0041		2232	.77	.09		2305	.0133	.0041			
5-14	.10	.0000		2237	1.32	.20		2320	.0197	.0090			
5-15	.05	.0000		2242	2.64	.42		2335	.0244	.0151			
5-16	2.40	.2470	5-18	2247	3.24	.69	5-18	2350	.0326	.0233			
				2252	.84	.76		2400	.1057	.0409			
2302	.60	.86		0020	.1260	.0829							
2307	1.20	.96		0035	.1115	.0689							
2312	.48	1.00		0050	.0829	.0906							
Watershed conditions: Paved roads - 1.5% of the area; rangeland - 98.5%. Poor range condition - 56% of the area; fair condition - 44%.				5-18	2400	.19	1.15	0105	.0614	.1059			
					0032	.04	1.17	0120	.0523	.1190			
					0102	.08	1.21	0135	.0355	.1279			
					3/0202	.02	1.23	0150	.0290	.1351			
					RG	12	1.86	0205	.0256	.1415			
									0220	.0198	.1465		
									0235	.0136	.1499		
							0250	.0129	.1531				
							0305	.0103	.1556				
							0335	.0082	.1597				
							0405	.0061	.1628				
							0435	.0040	.1648				
							0735	.0018	.1703				
							0805	T	.1703				
							0905	.0000	.1703				

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 691.71. 1/ RUNOFF RATE SHOWN IS THE AVERAGE RATE IN IN/HR FOR THE PRECEDING TIME INTERVAL DETERMINED FROM THE ACCUMULATION DATA AS COMPUTED FROM THE RESERVOIR STAGE-VOLUME CURVE AND SPILLWAY FLOW RATING. 2/ THIESSEN WEIGHTED RAINFALL USING RAIN GAGES 12 AND 13. 3/ RAINFALL BETWEEN 1700 AND 2000 ON 5-18 AMOUNTED TO 0.04 INCH (THIESSEN WEIGHTED) BUT DID NOT CAUSE RUNOFF.

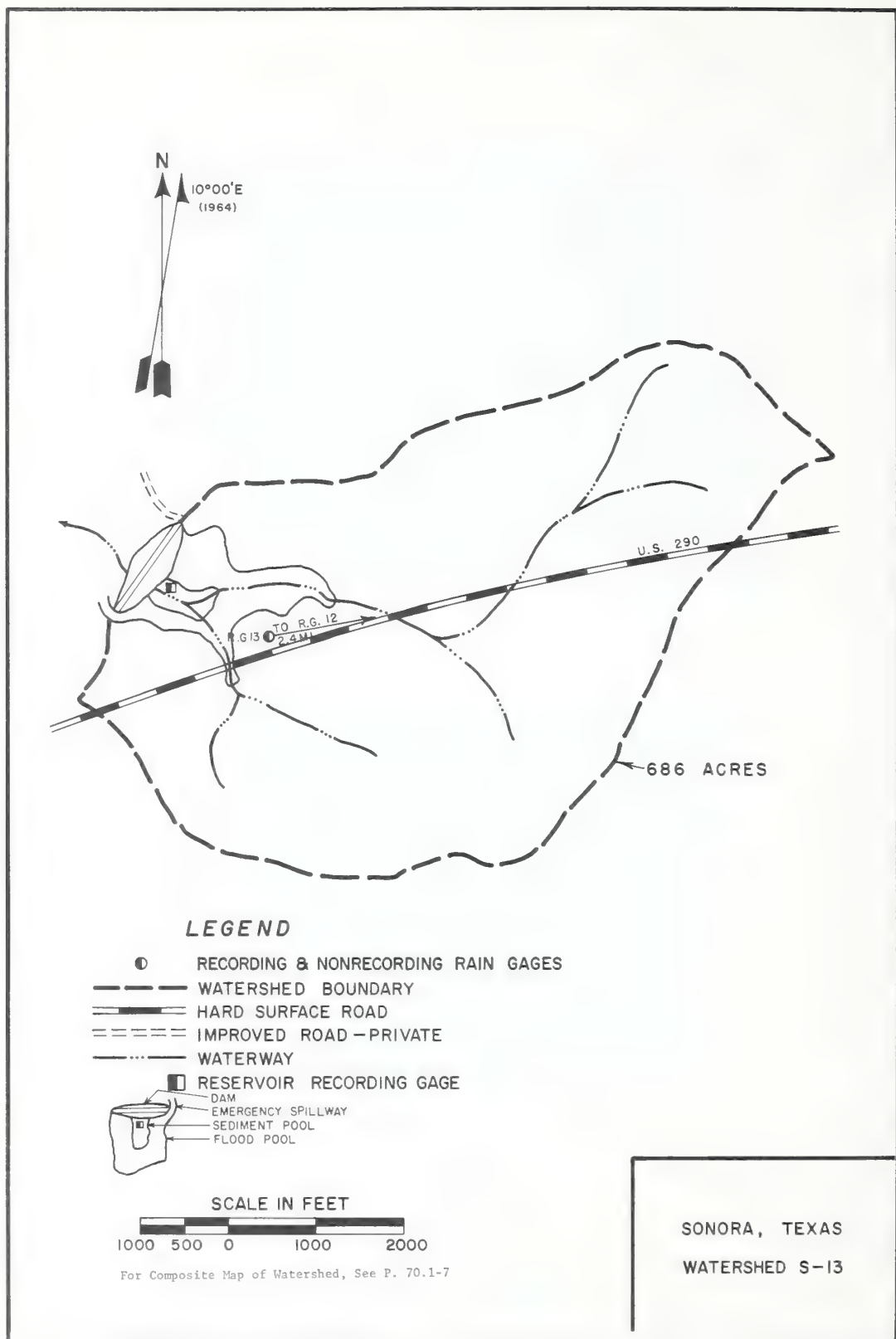
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 691.71. 1/ RUNOFF RATE SHOWN IS THE AVERAGE RATE IN IN/HR FOR THE PRECEDING TIME INTERVAL DETERMINED FROM THE ACCUMULATION DATA AS COMPUTED FROM THE RESERVOIR STAGE-VOLUME CURVE AND SPILLWAY FLOW RATING. 2/ THIESSEN WEIGHTED RAINFALL USING RAIN GAGES 12 AND 13. 3/ RAINFALL BETWEEN 1700 AND 2000 ON 5-18 AMOUNTED TO 0.04 INCH (THIESSEN WEIGHTED) BUT DID NOT CAUSE RUNOFF.



SONORA, TEXAS WATERSHED S-13



SONORA, TEXAS WATERSHED S-13



SONORA, TEXAS WATERSHED W-1

LOCATION: Edwards County, Tex.; 28 miles (highway) south of Sonora; East Fork Devils River, Devils River, Rio Grande Basin.

AREA: 10.2 acres

<u>SLOPES:</u>	Slope—Percent	0-3	3-8
	Percent of area	0	100

SOILS: Residual, derived from highly calcareous limestones.

Type	Per- cent of area	Topsoil			Subsoil		Substratum		Internal drainage
		Avg. depth (in.)	Structure	Perme- ability	Structure	Perme- ability	Avg. depth to(in.)	Perme- ability	
Tarrant stony clay	100	5	Strong medium to fine granular	Moderate	-----	-----	5	Moderately slow	Rapid

<u>EROSION:</u>	Erosion class	1	2
	Percent of area	0	100

<u>LAND CAPABILITY:</u>	Class	I	II	III	IV	V	VI
	Percent of area	0	0	0	0	0	100

GEOLOGY: Edwards and associated limestones of Lower Cretaceous age. Alternating beds of hard limestone and marly limestone overlying hard limestone, jointed and cavernous, thickness 30 to 60 ft. Strike N26°W, dip S54°W at 4.5 feet per mile. Source of data: Geology and Groundwater Studies in Part of the Edwards Plateau of Texas, Including Sutton and Adjacent Counties, U. S. Dept. Agr., ARS 41-103, April 1966.

SURFACE DRAINAGE: Good; no well-defined drainageways; terraces collect runoff at lower side of watershed; terraces 750 feet long each side of runoff measuring flume.

CHARACTER OF FLOW: Ephemeral, continuous.

INSTRUMENTATION: Runoff: Type HL-4 flume, 12-hr. chart. Precipitation: One weighing-recording rain gage, 12-hr. chart.

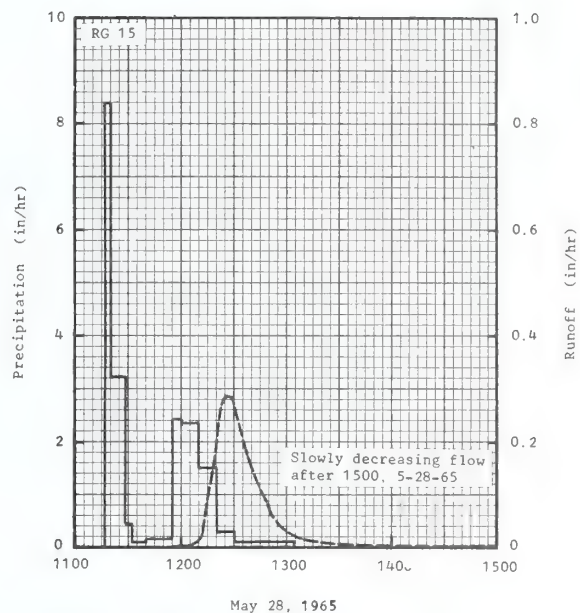
WATERSHED CONDITIONS: Rangeland, 100 percent. Fair level of management; stocking rate 30-35 animal units per section.

GENERALLY REPRESENTS: Low stony hills range sites of the Edwards Plateau land resource area (I-81) in southwest Texas.

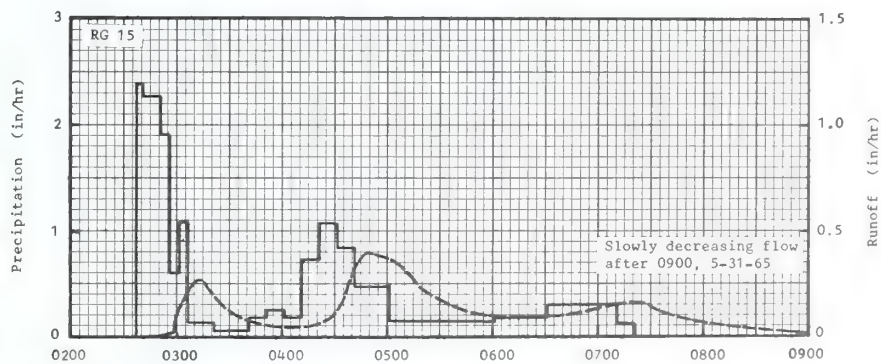
MONTHLY PRECIPITATION AND RUNOFF (inches)						SONORA, TEXAS		WATERSHED W-1					70.07			
						AREA — 10.2 ACRES										
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1963	P ¹ / _Q										.71 .00	2.13 .00	.57 .00	3.41 .00		
1964	P ¹ / _Q	3.49 .68	1.51 .00	.72 .00	1.97 .00	1.64 .00	.77 .00	3.29 .06	2.52 .03	7.95 1.57E	1.53 .00	.55 .00	.74 .00	26.68 2.34E		
1965	P ¹ / _Q	.66 .00	2.56 .00	T .00	.45 .00	7.47 .97	2.02 .00	1.57 .00	.63 .00	1.38 .00	1.38 .00	.23 .00	1.00 .00	19.35 .97		
1966	P ¹ / _Q	1.18 .00	1.42 .00	1.20 .00	6.78 1.56	1.66 .01	2.96 .01	2.08 .00	6.01 .23	4.16 .00	1.65 .00	.12 .00	.00 .00	29.22 1.81		
1967	P ¹ / _Q	.08 .00	.64 .00	.05 .00	1.39 .00	1.84 .00	.28 .00	2.97 .01	1.29 .00	3.91 .00	1.24 .00	2.75 .00	1.05 .00	17.49 .01		
STA AVG ² / _P (64-67) Q		1.35 .17	1.53 .00	.49 .00	2.65 .39	3.15 .24	1.51 T	2.48 .02	2.61 .06	4.35 .39	1.45 .00	.91 .00	.70 .00	23.18 1.27		
MEAN P ² / _{45 YR}		1.01	1.02	.96	1.69	2.88	2.74	2.08	1.75	3.08	2.17	.89	1.21	21.48		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1964	9-24	.68	9-24	.45E	9-24	.60E	9-24	.76E	9-24	.82E	9-24	1.02E	9-23	1.03E	9-21	1.57E
1965	5-31	.40	5-31	.30	5-31	.41	5-31	.78	5-31	.81	5-31	.81	5-31	.81	5-28	.94
1966	4-30	1.68	4-30	.99	4-30	1.18	4-30	1.28	4-30	1.30	4-30	1.30	4-29	1.49	4-24	1.52
1967	7-20	.01	7-20	.01	7-20	.01	7-20	.01	7-20	.01	7-20	.01	7-20	.01	7-20	.01
MAXIMUMS FOR PERIOD OF RECORD																
1964 To 1967	4-30 1966	1.68	4-30 1966	.99	4-30 1966	1.18	4-30 1966	1.28	4-30 1966	1.30	4-30 1966	1.30	4-29 1966	1.49	9-21 1964	1.57E
NOTES: Watershed conditions: 100 percent rangeland; fair level of management; stocking rate, 30-35 animal units per section. 1/ Precipitation data from rain gage 15. 2/ Precipitation and runoff records began October 1963; part-year amounts not included in station averages. 3/ Mean P based on 45-yr. (1923-67) record period at the Texas Agricultural Experiment Station, Substation No. 14. Watershed is on substation property.																
1965 SELECTED RUNOFF EVENTS						SONORA, TEXAS		WATERSHED W-1					70.07			
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
Event of May 28, 1965																
5-10	RG 15 .46	.0000	5-28	RG 1117	.00	.00	5-28	1152	.0000	.0000						
5-12	.20	.0000		1120	8.40	.42		1156	.0004	.0004						
5-13	.06	.0000		1128	3.22	.85		1200	.0017	.0001						
5-14	.05	.0000		1132	.45	.88		1204	.0036	.0003						
								1208	.0072	.0006						
5-16	2.34	.0248		1140	.08	.89		1211	.0143	.0011						
5-17	.33	.0000		1155	.16	.93		1213	.0540	.0022						
5-18	.15	.0000		1200	2.40	1.13		1215	.0921	.0047						
				1210	2.34	1.52		1218	.1556	.0110						
				1220	1.50	1.77		1220	.1969	.0169						
Watershed conditions:						1230	.30	1.82	1222	.2455	.0243					
Rangeland - 100%. Range condition, fair.						1304	.11	1.88	1224	.2790	.0330					
								1226	.2876	.0425						
								1228	.2821	.0520						
								1232	.2390	.0693						
								1236	.1956	.0838						
								1240	.1482	.0952						
								1244	.1122	.1037						
								1248	.0843	.1102						
								1252	.0614	.1149						
								1304	.0243	.1235						
								1312	.0150	.1261						
								1320	.0090	.1277						
								1334	.0050	.1292						
								1354	.0018	.1304						
								1404	.0008	.1306						
								1414	.0004	.1307						
								1434	.0003	.1308						
								1504	.0001	.1309						
								1540	.0000	.1310						
NOTE: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 10.265.																

1965-66			SELECTED RUNOFF EVENTS				SONORA, TEXAS		WATERSHED W-1			70.07
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF					
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in./hr.)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in./hr.)	ACC. (inches)		
Event of May 31, 1965												
	RG 15			RG	15		5-31	0242	.0000	.0000		
5-10	.46	.0000	5-31	0237	.00	.00		0246	.0006	T		
5-12	.20	.0000		0241	2.40	.16		0249	.0047	.0002		
5-13	.06	.0000		0251	2.28	.54		0251	.0058	.0003		
5-14	.05	.0000		0256	1.92	.70		0253	.0058	.0005		
5-16	2.34	.0248		0301	.60	.75		0255	.0090	.0008		
5-17	.33	.0000		0306	1.08	.84		0258	.0207	.0014		
5-18	.15	.0000		0321	.12	.87		0300	.0863	.0032		
5-28	1.88	.1310		0341	.06	.89		0303	.1361	.0091		
				0351	.18	.92		0307	.2114	.0212		
Watershed conditions: Rangeland - 100%. Range condition, fair.												
				0401	.24	.96		0311	.2550	.0368		
				0411	.18	.99		0313	.2646	.0454		
				0421	.72	1.11		0315	.2572	.0541		
				0431	1.08	1.29		0319	.2188	.0701		
				0441	.84	1.43		0323	.1786	.0834		
				0501	.48	1.59		0327	.1406	.0940		
				0601	.15	1.74		0333	.1063	.1064		
				0631	.18	1.83		0339	.0800	.1156		
				0711	.30	2.03		0347	.0594	.1247		
				0721	.12	2.05		0403	.0445	.1382		
								0411	.0445	.1441		
								0415	.0464	.1471		
								0421	.0573	.1523		
								0427	.0851	.1594		
								0431	.1253	.1662		
								0437	.2292	.1833		
								0441	.3164	.2021		
								0445	.3674	.2250		
								0449	.4007	.2509		
								0453	.3861	.2772		
								0507	.3431	.3621		
								0513	.2931	.3938		
								0519	.2369	.4204		
								0525	.2034	.4425		
								0535	.1550	.4721		
								0551	.1145	.5074		
								0603	.0976	.5286		
								0607	.0976	.5351		
								0627	.1019	.5684		
								0639	.1019	.5888		
								0651	.1182	.6104		
								0705	.1361	.6405		
								0715	.1617	.6656		
								0719	.1670	.6765		
								0723	.1635	.6875		
								0731	.1351	.7073		
								0739	.1086	.7235		
								0747	.0867	.7365		
								0755	.0690	.7469		
								0817	.0406	.7663		
								0857	.0207	.7858		
								0947	.0101	.7979		
								1037	.0057	.8042		
								1137	.0027	.8084		
								1237	.0008	.8100		
								1307	.0003	.8107		
								1507	.0000	.8109		
Event of April 30, 1966												
	RG 15			RG	15		4-30	1154	.0000	.0000		
4-13	1.23	.0441	4-30	1110	.00	.00		1156	.0022	T		
4-17	.40	.0000		1120	.18	.03		1200	.0033	.0002		
4-22	.06	.0000		1126	.20	.05		1214	.0033	.0010		
4-23	.58	.0000		1130	.60	.09		1224	.0041	.0016		
Watershed conditions: Rangeland - 100%. Range condition, fair.												
Continued on next page												
NOTE: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 10.285.												

1966			SONORA, TEXAS				WATERSHED W-1				70.07		
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF						
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)			
Event of April 30, 1966 - Continued													
4-24	1.07	.0099	4-30	1150	.18	.15	4-30	1238	.0082	.0029			
4-25	.09	.0183		1210	.04	.17		1242	.0152	.0037			
4-28	.40	.0000		1220	.00	.17		1248	.0252	.0057			
4-29	.95	.1849		1230	.60	.27		1254	.0485	.0092			
				1240	.30	.32		1258	.0876	.0136			
				1250	.66	.43		1300	.1488	.0174			
				1255	1.80	.58		1303	.5010	.0317			
				1300	4.44	.95		1306	1.2820	.0792			
				1310	1.98	1.28		1308	1.5581	.1277			
				1320	1.56	1.54		1310	1.6674	.1815			
				1330	1.02	1.71		1312	1.6778	.2372			
				1340	.42	1.78		1314	1.6571	.2928			
				1400	.30	1.88		1318	1.5541	.3999			
				1420	.21	1.95		1322	1.3902	.4980			
				1450	.10	2.00		1326	1.2499	.5861			
								1330	1.1360	.6656			
								1334	.9695	.7362			
								1340	.8099	.8256			
								1346	.6057	.8961			
								1352	.4767	.9506			
								1400	.3474	1.0051			
								1408	.2868	1.0471			
								1420	.2243	1.0986			
								1432	1.641	1.1371			
								1444	1.1381	1.1671			
								1459	.1006	1.1966			
								1514	.0671	1.2171			
								1534	.0448	1.2353			
								1604	.0282	1.2535			
								1704	.0132	1.2729			
								1804	.0072	1.2827			
								2000	.0035	1.2920			
								2400	1.0006	1.2987			
Event of August 11, 1966													
7-23	RG 15	.0000	8-11	RG	15		8-11	0629	.0000	.0000			
7-25	.10	.0000		0614	.00	.00		0631	.0007	.0004			
7-31	.07	.0000		0620	.80	.08		0637	.0058	.0004			
7-31	.29	.0000		0625	.48	.12		0639	.0058	.0006			
8-02	.07	.0000		0630	5.64	.59		0642	.0139	.0010			
8-03	1.20	.0000		0640	4.14	1.28		0645	.0323	.0020			
8-06	.32	.0000		0645	4.44	1.65		0648	.1292	.0055			
				0650	3.36	1.93		0650	.2067	.0113			
				0700	1.86	2.24		0653	.2557	.0233			
				0705	1.32	2.35		0655	.2609	.0319			
				0710	.72	2.41		0701	.2722	.0585			
				0750	.26	2.58		0705	.2684	.0766			
				0810	.00	2.58		0709	.2462	.0938			
				0840	.12	2.64		0713	.1975	.1087			
				0900	.42	2.78		0719	.1366	.1255			
				0930	.22	2.89		0725	.0921	.1367			
				1030	.10	2.99		0733	.0587	.1464			
				1050	.06	3.01		0745	.0374	.1558			
				1103	.23	3.06		0754	.0250	.1604			
								0809	.0124	.1648			
								0829	.0069	.1679			
								0839	.0063	.1690			
								0849	.0063	.1701			
								0859	.0099	.1713			
								0909	.0197	.1738			
								0919	.0294	.1781			
								0929	.0333	.1833			
								0939	.0351	.1890			
								0944	.0351	.1919			
								0949	.0333	.1948			
								1019	.0213	.2075			
								1059	.0120	.2188			
								1119	.0079	.2221			
								1139	.0046	.2242			
								1219	.0020	.2265			
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 10.285.													
2/ BEGINNING OF NEXT EVENT.													

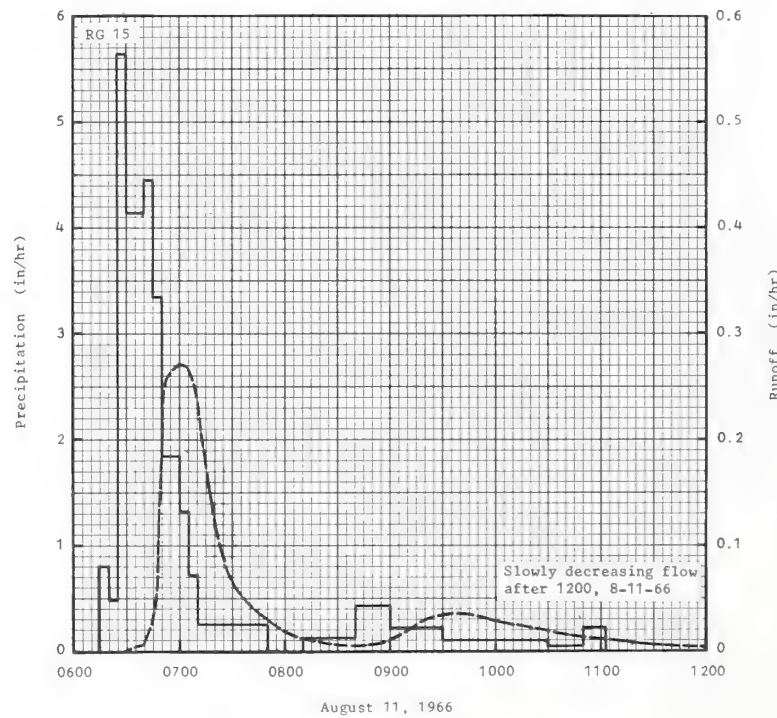
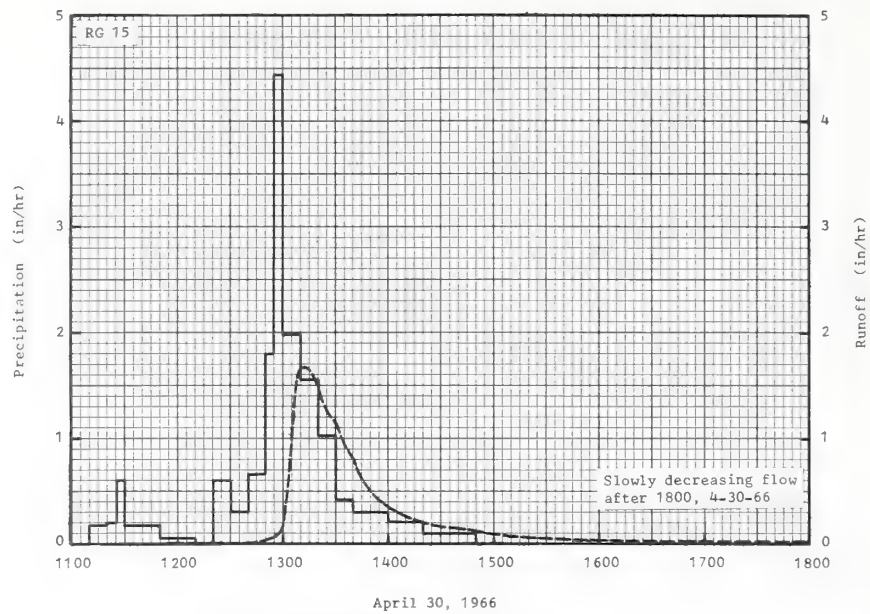


May 28, 1965

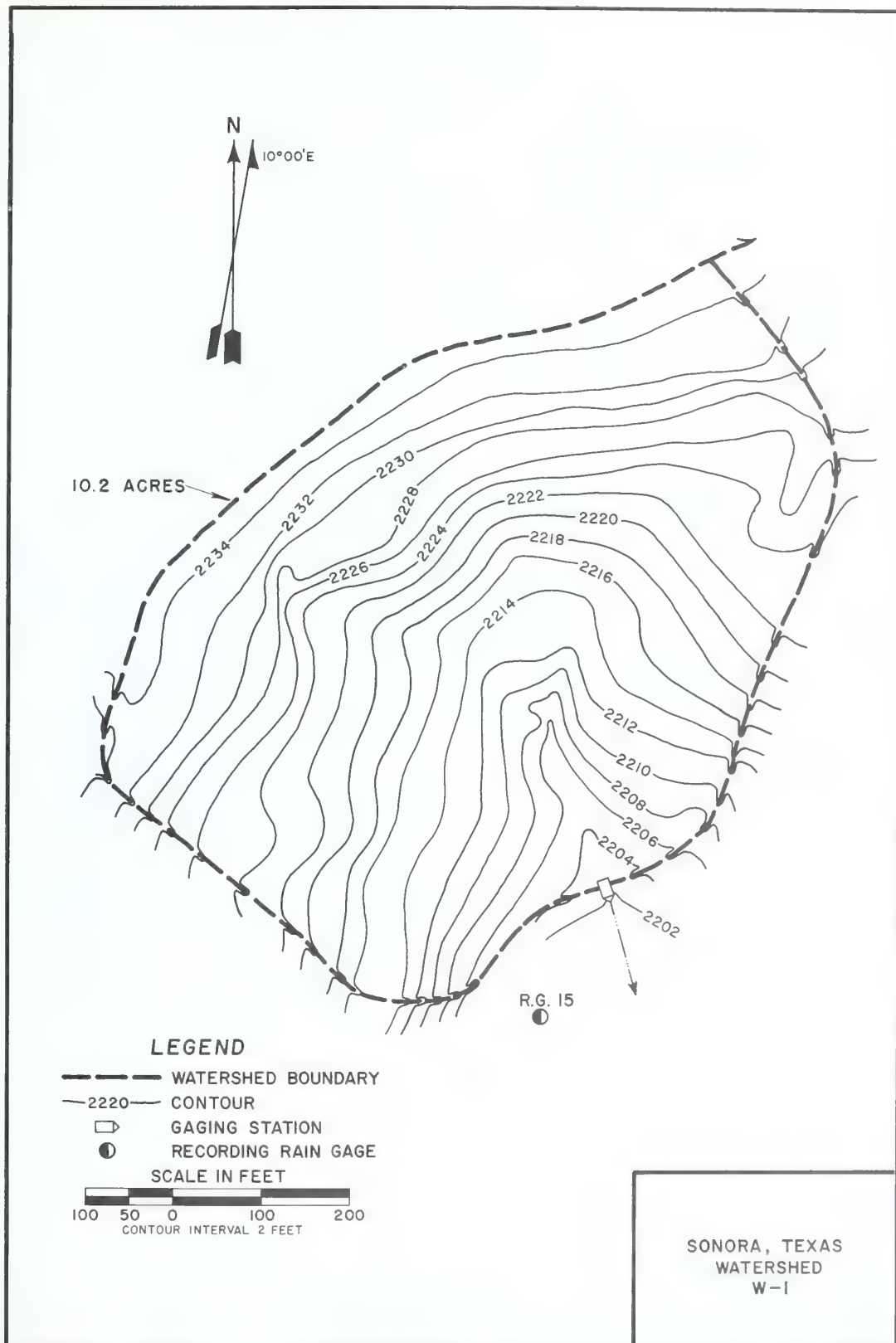


May 31, 1965

SONORA, TEXAS WATERSHED W-1



SONORA, TEXAS WATERSHED W-1



SONORA, TEXAS WATERSHED W-2

LOCATION: Edwards County, Tex.; 28 miles (highway) south of Sonora; East Fork Devils River, Devils River, Rio Grande Basin.

AREA: 8.6 acres

<u>SLOPES:</u>	Slope—Percent	0-3	3-8
	Percent of area	0	100

SOILS: Residual, derived from highly calcareous limestones.

Type	Per- cent of area	Topsoil			Subsoil		Substratum		Internal drainage
		Avg. depth (in.)	Structure	Perme- ability	Structure	Perme- ability	Avg. depth to(in.)	Perme- ability	
Tarrant stony clay	100	5	Strong medium to fine granular	Moderate	-----	-----	5	Moderately slow	Rapid

<u>EROSION:</u>	Erosion class	1	2
	Percent of area	0	100

<u>LAND CAPABILITY:</u>	Class	I	II	III	IV	V	VI
	Percent of area	0	0	0	0	0	100

GEOLOGY: Edwards and associated limestones of Lower Cretaceous age. Alternating beds of hard limestone and marly limestone overlying hard limestone, jointed and cavernous, thickness 50 to 80 ft. Strike N26°W, dip S54°W at 4.5 feet per mile. Source of data: Geology and Groundwater Studies in Part of the Edwards Plateau of Texas, Including Sutton and Adjacent Counties, U. S. Dept. Agr., ARS 41-103, April 1966.

SURFACE DRAINAGE: Good; no well-defined drainageways; terraces collect runoff at lower side of watershed; terraces 550 feet long each side of runoff measuring flume.

CHARACTER OF FLOW: Ephemeral, continuous.

INSTRUMENTATION: Runoff: Type HL-4 flume; 12-hr. chart. Precipitation: One weighing-recording rain gage, 12-hr. chart.

WATERSHED CONDITIONS: Rangeland, 100 percent. Low good level of management; stocking rate, 32 animal units per section.

GENERALLY REPRESENTS: Low stony hills range sites of the Edwards Plateau land resource area (I-81) in southwest Texas.

MONTHLY PRECIPITATION AND RUNOFF (inches)						SONORA, TEXAS		WATERSHED W-2					70.08			
						AREA — 8.6 ACRES										
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1965 P ¹ / _Q	.57 .00	2.20 .00	T .00	.39 .00	6.48 1.00	1.80 T	1.90 .00	.58 .00	1.35 .00	1.18 .00	.28 .00	.90 .00	17.63 1.00			
1966 P ¹ / _Q	1.14 .00	1.25 .00	1.00 .00	6.41 2.15	1.49 .02	2.74 T	1.85 .00	5.74 .22	4.02 .00	1.47 .00	.12 .00	.00 .00	27.23 2.39			
1967 P ¹ / _Q	.08 .00	.60 .00	.06 .00	1.25 .00	1.60 .00	.25 .00	3.03 .00	1.17 .00	3.93 .00	1.23 .00	2.79 .00	1.03 .00	17.02 .00			
STA AVG ² / _P (65-67) Q	.60 .00	1.35 .00	.35 .00	2.68 .72	3.19 .34	1.60 T	2.26 .00	2.50 .07	3.10 .00	1.29 .00	1.06 .00	.64 .00	20.62 1.13			
MEAN P ³ / _{45 YR}	1.01	1.02	.96	1.69	2.88	2.74	2.08	1.75	3.06	2.17	.89	1.21	21.48			

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS

YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1965	5-31	.36	5-31	.27	5-31	.44	5-31	.90	5-31	.97	5-31	.97	5-31	.97	5-28	.99
1966	4-30	1.55	4-30	1.25	4-30	1.71	4-30	1.96	4-30	2.00	4-30	2.00	4-29	2.14	4-24	2.16
1967		.00		.00		.00		.00		.00		.00		.00		.00

MAXIMUMS FOR PERIOD OF RECORD

1965 To 1967	4-30 1966	1.55	4-30 1966	1.25	4-30 1966	1.71	4-30 1966	1.96	4-30 1966	2.00	4-30 1966	2.00	4-29 1966	2.14	4-24 1966	2.16
-----------------	--------------	------	--------------	------	--------------	------	--------------	------	--------------	------	--------------	------	--------------	------	--------------	------

NOTES: Watershed conditions: 100 percent rangeland; low good level of management; stocking rate, 32 animal units per section. ¹/ Precipitation data from rain gage 16. ²/ Precipitation and runoff records began January 1965. ³/ Mean P based on 45-yr. (1923-67) record period at the Texas Agricultural Experiment Station, Substation No. 14. Watershed is on substation property.

1965 SELECTED RUNOFF EVENTS			SONORA, TEXAS				WATERSHED W-2			70.08
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)
Event of May 31 - June 1, 1965										
5-10	RG 16		5-31	RG	.16		5-31	0242	.0000	.0000
	.34	.0000		0233	.00	.00		0249	.0050	.0001
5-12	.22	.0000		0238	2.28	.19		0252	.0195	.0007
5-13	.03	.0000		0248	1.98	.52		0300	.0902	.0078
5-14	.05	.0000		0253	2.52	.73		0306	.0172	.0475
5-16	1.97	.0152		0258	.60	.78		0312	.0265	.0568
5-17	.33	.0000		0305	.69	.86		0318	.0848	.0355
5-18	.11	.0000		0328	.05	.88		0324	.0668	.0430
5-28	1.46	.0151		0338	.24	.92		0330	.0517	.0490
				0358	.15	.97		0336	.0366	.0533
Watershed conditions:				0408	.18	1.00		0346	.0299	.0588
Rangeland - 100%. Range				0423	.52	1.13		0400	.0275	.0655
condition, low good.				0428	1.92	1.29		0412	.0302	.0712
				0438	.78	1.42		0416	.0360	.0734
				0448	.30	1.47		0420	.0521	.0763
				0458	.48	1.55		0424	.0745	.0805
				0558	.12	1.67		0428	.1058	.0864
				0628	.20	1.77		0432	.1715	.0955
				0658	.24	1.89		0436	.2088	.1083
				0708	.36	1.95		0438	.2213	.1155
				0718	.12	1.97		0440	.3400	.1248
								0442	.3607	.1365
								0445	.3645	.1546
								0450	.3345	.1837
								0500	.3191	.2373
								0512	.2506	.2941
								0520	.2198	.3255
								0540	.1727	.3905
								0545	.1625	.4045
								0610	.1721	.4733
								0640	.1788	.5616
								0700	.2251	.6314
								0710	.2684	.6728
								0720	.2490	.7164
								0730	.2052	.7544

Continued on next page

Continued on next page

NOTE: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 8.672.

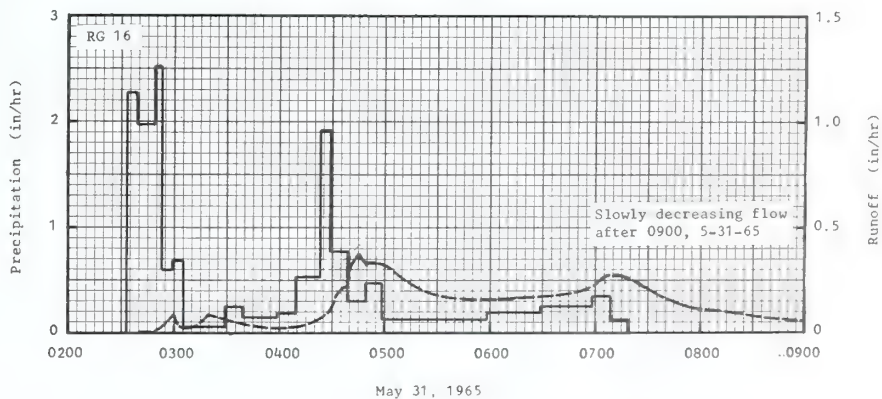
1965-66			SELECTED RUNOFF EVENTS				SONORA, TEXAS		WATERSHED W-2		70.08
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in./hr.)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in./hr.)	ACC. (inches)	
Event of May 31 - June 1, 1965 - Continued											
							5-31	0742	.1555	.7903	
								0800	.1162	.8314	
								0830	.0753	.8782	
								0900	.0521	.9095	
								0930	.0337	.9308	
								1000	.0231	.9447	
								1130	.0051	.9629	
								1300	.0006	.9665	
								2400	.0002	.9706	
							6-01	0930	.0000	.9714	
Event of April 30 - May 2, 1966											
	RG 16			RG	16		4-30	1137	.0000	.0000	
4-13	1.01	.0051	4-30	1110	.00	.00		1143	.0037	.0002	
4-17	.40	.0000		1126	.19	.05		1151	.0107	.0013	
4-22	.05	.0000		1130	.75	.10		1157	.0111	.0024	
4-23	.49	.0000		1150	.18	.16		1207	.0104	.0042	
				1210	.09	.19		1223	.0077	.0066	
4-24	.94	.0045		1220	.00	.19		1227	.0077	.0071	
4-25	.07	.0046		1230	.54	.28		1233	.0128	.0081	
4-28	.41	.0000		1240	.36	.34		1241	.0260	.0106	
4-29	.99	.1297		1250	.60	.44		1251	.0539	.0170	
				1255	1.44	.58		1257	.1019	.0241	
				1300	5.04	1.00		1300	.2059	.0317	
				1310	2.10	1.35		1303	.6038	.0496	
				1320	1.44	1.59		1305	1.1095	.0787	
				1330	.96	1.75		1307	1.3171	.1191	
				1340	.48	1.83		1309	1.4280	.1648	
				1400	.24	1.92		1311	1.5307	.2141	
				1420	.21	1.99		1313	1.5543	.2655	
				1450	.12	2.05		1315	1.5264	.3169	
								1317	1.4778	.3670	
								1319	1.4403	.4156	
								1321	1.4799	.4643	
								1325	1.4799	.5629	
								1329	1.3851	.6584	
								1333	1.3669	.7502	
								1337	1.3790	.8417	
								1339	1.3429	.8871	
								1341	1.2663	.9305	
								1345	1.1680	1.0113	
								1351	1.0127	1.1208	
								1357	.8612	1.2156	
								1409	.6941	1.3710	
								1422	.5545	1.5076	
								1437	.3888	1.6237	
								1502	.2251	1.7493	
								1522	.1491	1.8105	
								1542	.1038	1.8524	
								1607	.0656	1.8871	
								1757	.0197	1.9577	
								2400	.0041	2.0009	
							5-01	0600	.0005	2.0133	
								2400	.0001	2.0166	
							5-02	1600	.0000	2.0172	
Event of August 11, 1966											
	RG 16			RG	16		S-11	0637	.0000	.0000	
7-23	.15	.0000	8-11	0616	.00	.00		0641	.0215	.0006	
7-25	.10	.0000		0620	.90	.06		0645	.0800	.0037	
7-31	.19	.0000		0625	.24	.08		0647	.1014	.0067	
8-02	.11	.0000		0630	4.44	.45		0649	.1188	.0104	
				0640	3.96	1.11		0651	.1107	.0142	
8-03	1.09	.0000		0645	3.60	1.41		0653	.1009	.0177	
8-06	.50	.0000		0650	2.64	1.63		0655	.0962	.0210	
				0655	1.56	1.76		0657	.0990	.0243	
				0700	1.92	1.92		0659	.1072	.0277	
Watershed conditions: Rangeland - 100%. Range condition, low good.											
Continued on next page											

NOTE: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 8.672.

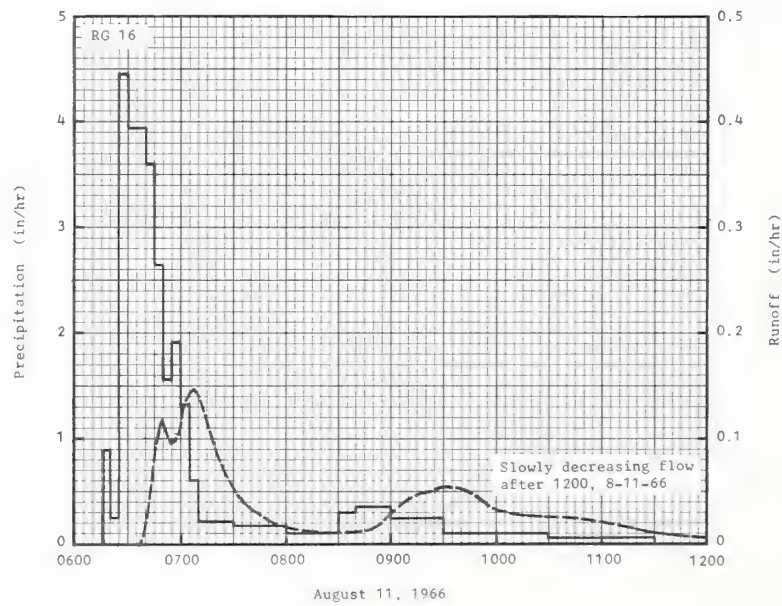
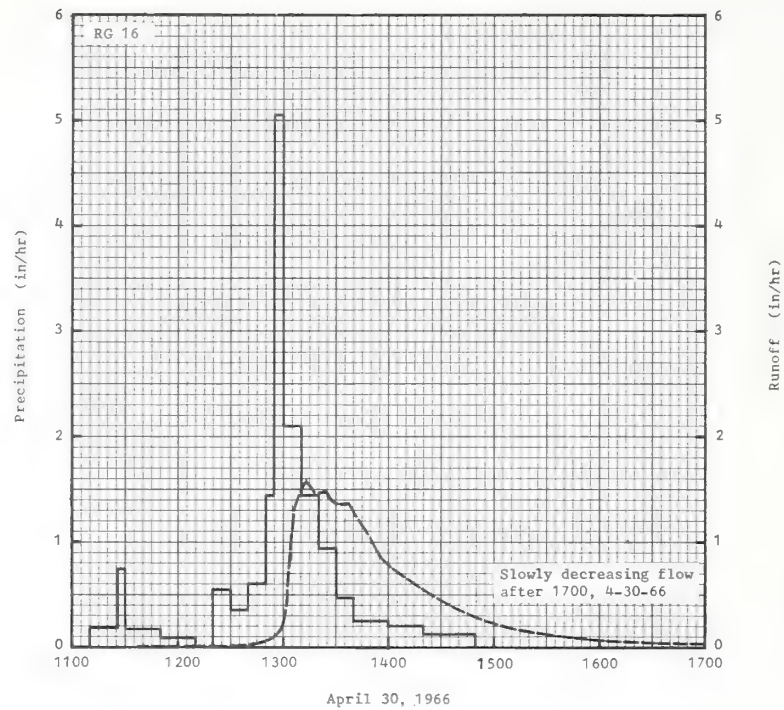
NOTE: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 8.672.

1966 SELECTED RUNOFF EVENTS			SONORA, TEXAS				WATERSHED W-2				70.08
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)	
Event of August 11, 1966 - Continued											
			8-11	0705	1.32	2.03	8-11	0701	.1219	.0315	
				0710	.60	2.08		0703	.1358	.0358	
				0730	.21	2.15		0707	.1452	.0452	
				0800	.18	2.24		0711	.1379	.0546	
				0830	.10	2.29		0713	.1250	.0590	
				0840	.30	2.34		0717	.1014	.0665	
				0900	.36	2.46		0721	.0822	.0726	
				0930	.24	2.58		0725	.0696	.0777	
				1030	.10	2.68		0729	.0542	.0818	
				1130	.06	2.74		0737	.0374	.0879	
								0745	.0291	.0924	
								0753	.0217	.0958	
								0809	.0132	.1002	
								0819	.0106	.1022	
								0829	.0099	.1039	
								0839	.0106	.1056	
								0853	.0182	.1089	
								0857	.0238	.1102	
								0903	.0334	.1131	
								0907	.0395	.1155	
								0911	.0437	.1183	
								0919	.0494	.1245	
								0929	.0527	.1330	
								0939	.0517	.1417	
								0944	.0501	.1460	
								0949	.0440	.1499	
								0959	.0334	.1562	
								1019	.0283	.1663	
								1049	.0217	.1790	
								1119	.0147	.1880	
								1149	.0088	.1937	
								1259	.0031	.2003	
								1409	.0007	.2027	
								1900	.0000	.2043	

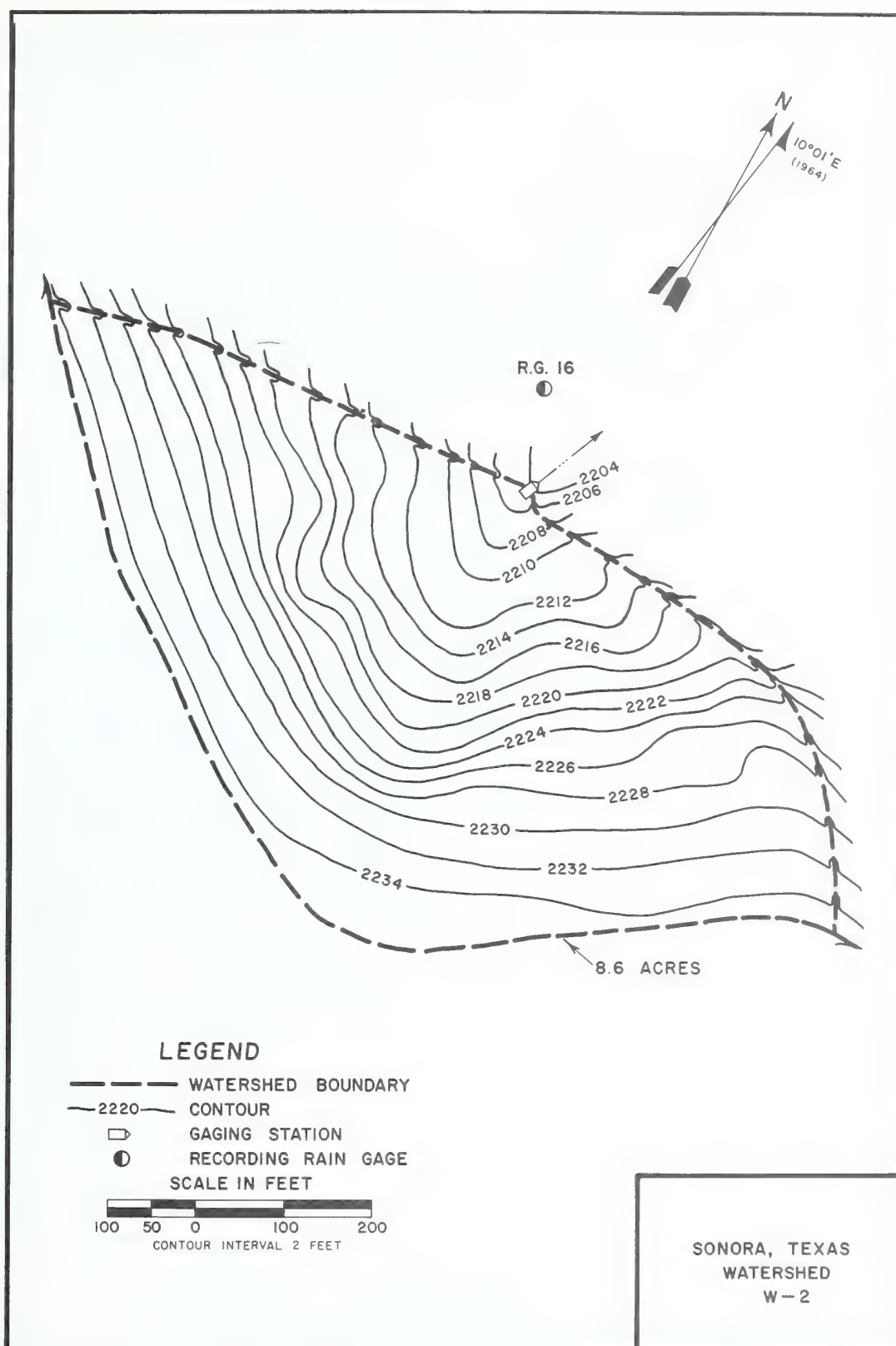
NOTE: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 8.672.



SONORA, TEXAS WATERSHED W-2



SONORA, TEXAS WATERSHED W-2



SONORA, TEXAS WATERSHED W-3

LOCATION: Edwards County, Tex.; 28 miles (highway) south of Sonora; East Fork Devils River, Devils River, Rio Grande Basin.

AREA: 6.7 acres

<u>SLOPES:</u>	Slope—Percent	0-3
	Percent of area	100

SOILS: Residual, derived from highly calcareous limestones.

Type	Per- cent of area	Topsoil			Subsoil		Substratum		Internal drainage
		Avg. depth (in.)	Structure	Perme- ability	Structure	Perme- ability	Avg. depth to(in.)	Perme- ability	
Tarrant stony clay	100	8	Strong medium to fine granular	Moderate	Strong fine granular	Moderately slow	18	Moderately slow	Rapid

<u>EROSION:</u>	Erosion class	1	2
	Percent of area	0	100

<u>LAND CAPABILITY:</u>	Class	I	II	III	IV	V	VI
	Percent of area	0	0	0	0	0	100

GEOLOGY: Edwards and associated limestones of Lower Cretaceous age. Marly limestone, thickness 10 to 25 ft. Strike N26°W, dip S54°W at 4.5 feet per mile. Source of data: Geology and Groundwater Studies in Part of the Edwards Plateau of Texas, Including Sutton and Adjacent Counties, U. S. Dept. Agr., ARS 41-103, April 1966.

SURFACE DRAINAGE: Good; no well-defined drainageways; terraces collect runoff at lower side of watershed; terraces 200 feet long each side of runoff measuring flume.

CHARACTER OF FLOW: Ephemeral, continuous.

INSTRUMENTATION: Runoff: Type H-4.5 flume, 12-hr. chart. Precipitation: One weighing-recording rain gage, 12-hr. chart.

WATERSHED CONDITIONS: Rangeland, 100 percent. High fair level of management; stocking rate, 32 animal units per section.

GENERALLY REPRESENTS: Shallow upland range sites of the Edwards Plateau land resource area (I-81) in southwest Texas.

MONTHLY PRECIPITATION AND RUNOFF (inches)						SONORA, TEXAS		WATERSHED W-3					70.09		
						AREA — 6.7 ACRES									
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1965 P ¹ / _Q	.54 .00	2.55 .00	T .00	.28 .00	7.32 .05	2.35 .00	.65 .00	.29 .00	1.29 .00	1.83 .00	.36 .00	1.08 T	18.54 .05		
1966 P ¹ / _Q	1.13 .00	1.12 .00	1.28 .00	6.70 1.26	1.72 .00	2.54 .00	1.30 .00	6.27 .00	2.86 .00	1.55 .00	T .00	.00 .00	26.47 1.26		
1967 P ¹ / _Q	.08 .00	.62 .00	.07 .00	1.66 .00	2.02 .00	.14 .00	3.25 .00	2.21 .00	5.01 .00	1.34 .00	2.58 .00	.98 .00	19.96 .00		
STA AVG ² / _P (65-67) Q	.58 .00	1.43 .00	.45 .00	2.88 .42	3.69 .02	1.68 .00	1.73 .00	2.92 .00	3.05 .00	1.57 .00	.98 .00	.69 T	21.65 .44		
MEAN P ³ / _{45 YR}	1.01	1.02	.96	1.69	2.88	2.74	2.08	1.75	3.08	2.17	.89	1.21	21.48		

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS

YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1965	5-31	.02	5-31	.02	5-31	.02	5-31	.04	5-31	.04	5-31	.04	5-31	.04	5-31	.04
1966	4-30	1.67	4-30	1.02	4-30	1.22	4-30	1.26	4-30	1.26	4-30	1.26	4-30	1.26	4-30	1.26
1967		.00		.00		.00		.00		.00		.00		.00		.00

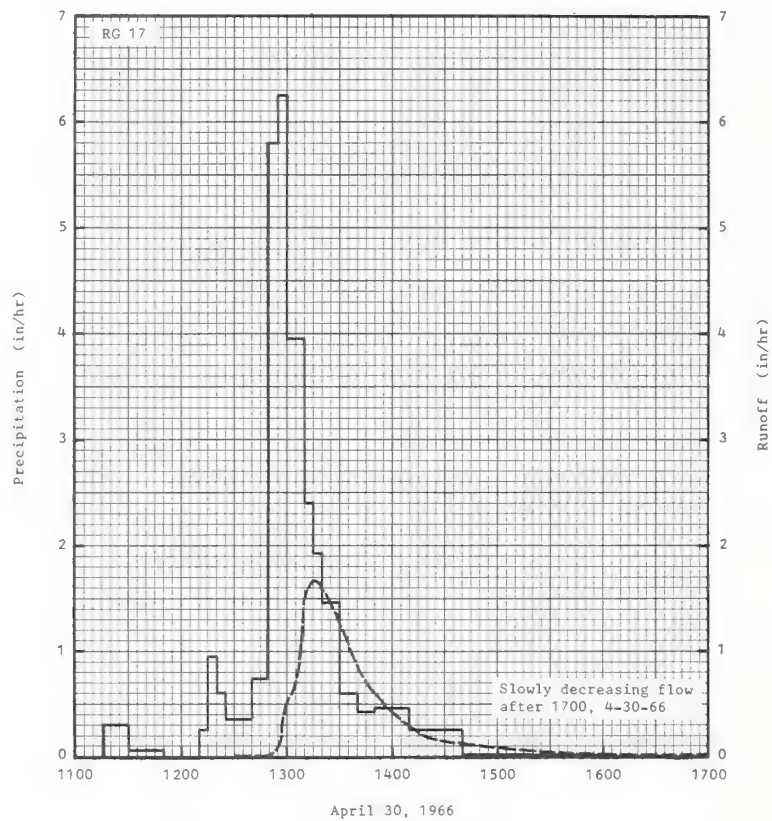
MAXIMUMS FOR PERIOD OF RECORD

1965 To 1967	4-30 1966	1.67	4-30 1966	1.02	4-30 1966	1.22	4-30 1966	1.26	4-30 1966	1.26	4-30 1966	1.26	4-30 1966	1.26	4-30 1966	1.26
-----------------	--------------	------	--------------	------	--------------	------	--------------	------	--------------	------	--------------	------	--------------	------	--------------	------

NOTES: Watershed conditions: 100 percent rangeland; range in fair condition. ¹/_P Precipitation data from rain gage 17. ²/_P Precipitation and runoff records began January 1965. ³/_P Mean P based on 45-yr. (1923-67) record period at the Texas Agricultural Experiment Station, Substation No. 14, 18 miles south of Sonora, Tex.

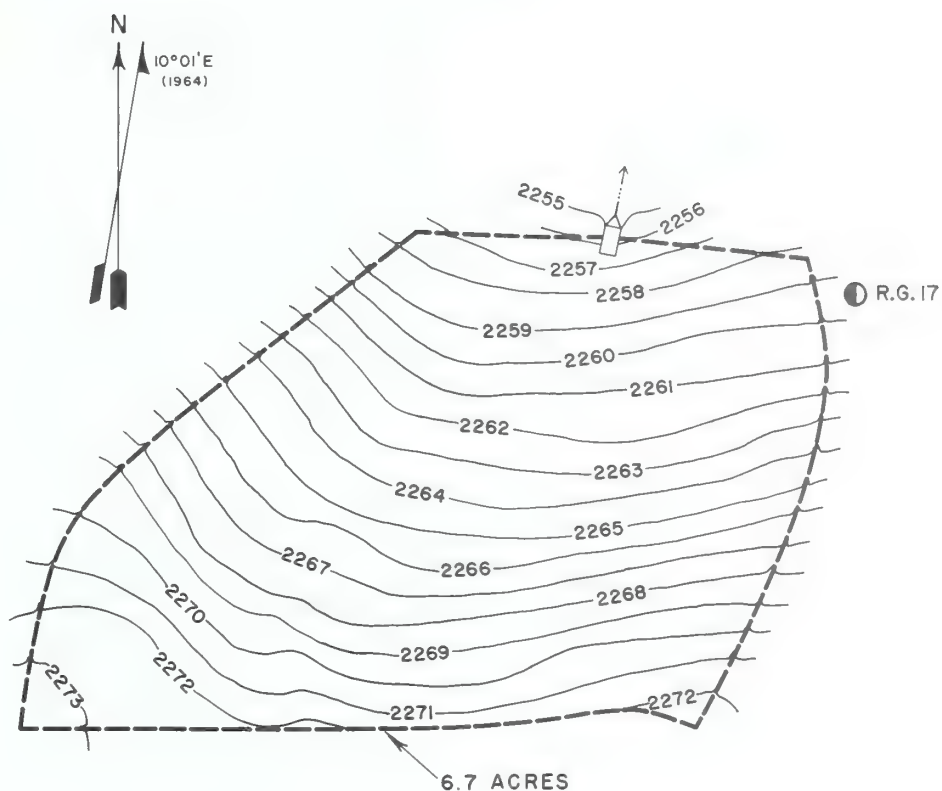
1966 SELECTED RUNOFF EVENT			SONORA, TEXAS				WATERSHED W-3				70.09	
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF					
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)		
Event of April 30, 1966												
4-13	RG 17 .24	.0000	4-30	RG	17	.00	4-30	1230	.0000	.0000		
4-17	.24	.0000		1116	.00	.00		1244	.0007	.0007	T	
4-23	.32	.0000		1130	.30	.07		1248	.0053	.0002		
4-24	1.15	.0000		1150	.06	.09		1251	.0154	.0007		
				1210	.00	.09		1254	.0506	.0020		
4-25	.02	.0000		1215	.24	.11		1257	.2258	.0105		
4-28	.35	.0000		1220	.96	.19		1300	.4964	.0287		
4-29	.99	.0000		1225	.60	.24		1304	.6595	.0664		
				1240	.36	.33		1307	.9245	.1063		
				1249	.73	.44		1310	1.5027	.1644		
				1255	5.80	1.02		1312	1.5656	.2155		
				1300	6.24	1.54		1314	1.6395	.2689		
				1310	3.96	2.20		1316	1.6662	.3240		
				1315	2.40	2.40		1318	1.6492	.3793		
				1320	1.92	2.56		1320	1.5940	.4333		
				1330	1.44	2.80		1324	1.4775	.5357		
				1340	.60	2.90		1328	1.3157	.6288		
				1350	.42	2.97		1332	1.1739	.7118		
				1410	.45	3.12		1336	1.0141	.7847		
				1440	.26	3.25		1340	.8529	.8470		
				1600	.01	3.26		1348	.6261	.9449		
								1356	.4487	1.0152		
								1404	.3668	1.0696		
								1410	.2736	1.1012		
								1416	.2079	1.1252		
								1425	.1748	1.1542		
								1435	.1443	1.1809		
								1445	.1126	1.2025		
								1455	.0777	1.2184		
								1510	.0502	1.2343		
								1525	.0289	1.2438		
								1540	.0162	1.2494		
								1600	.0098	1.2537		
								1630	.0042	1.2569		
								1700	.0022	1.2585		
								1730	.0005	1.2592		
								1800	.0001	1.2593		
								1830	.0000	1.2594		

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 6.756.



SONORA, TEXAS

WATERSHED W-3



LEGEND

- WATERSHED BOUNDARY
- 2270— CONTOUR
- ▭ GAGING STATION
- RECORDING RAIN GAGE

SCALE IN FEET
 100 50 0 100 200
 CONTOUR INTERVAL 1 FOOT

SONORA, TEXAS
 WATERSHED
 W-3

SONORA, TEXAS WATERSHED W-4

LOCATION: Edwards County, Tex.; 28 miles (highway) south of Sonora; East Fork Devils River, Devils River, Rio Grande Basin.

AREA: 4.5 acres

<u>SLOPES:</u>	Slope—Percent	0-3
	Percent of area	100

SOILS: Residual, derived from highly calcareous limestones.

Type	Per- cent of area	Topsoil			Subsoil		Substratum		Internal drainage
		Avg. depth (in.)	Structure	Perme- ability	Structure	Perme- ability	Avg. depth to(in.)	Perme- ability	
Valera clay	100	12	Strong medium to fine granular	Moderate	Strong medium granular	Moderate	26	Moderately slow	Medium

<u>EROSION:</u>	Erosion class	1
	Percent of area	100

<u>LAND CAPABILITY:</u>	Class	I	II	III	IV	V	VI
	Percent of area	0	0	100	0	0	0

GEOLOGY: Edwards and associated limestones of Lower Cretaceous age. Marly limestone, thickness 4 to 16 ft. Strike N26°W, dip S54°W at 4.5 feet per mile. Source of data: Geology and Groundwater Studies in Part of the Edwards Plateau of Texas, Including Sutton and Adjacent Counties, U. S. Dept. Agr., ARS 41-103, April 1966.

SURFACE DRAINAGE: Good; no well-defined drainageways; terraces collect runoff at lower side of watershed; terraces 150 feet long each side of runoff measuring flume.

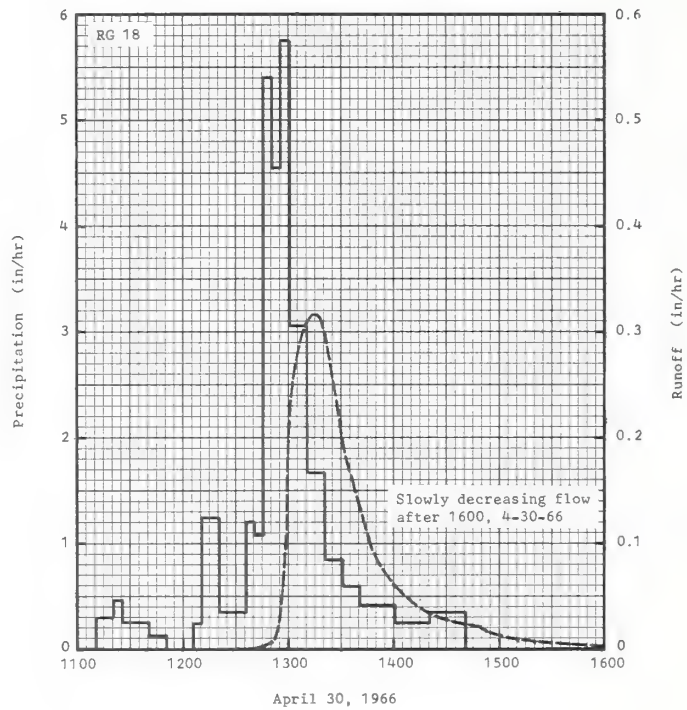
CHARACTER OF FLOW: Ephemeral, continuous.

INSTRUMENTATION: Runoff: Type HL-4 flume, 12-hr. chart. Precipitation: One weighing-recording rain gage, 12-hr. chart.

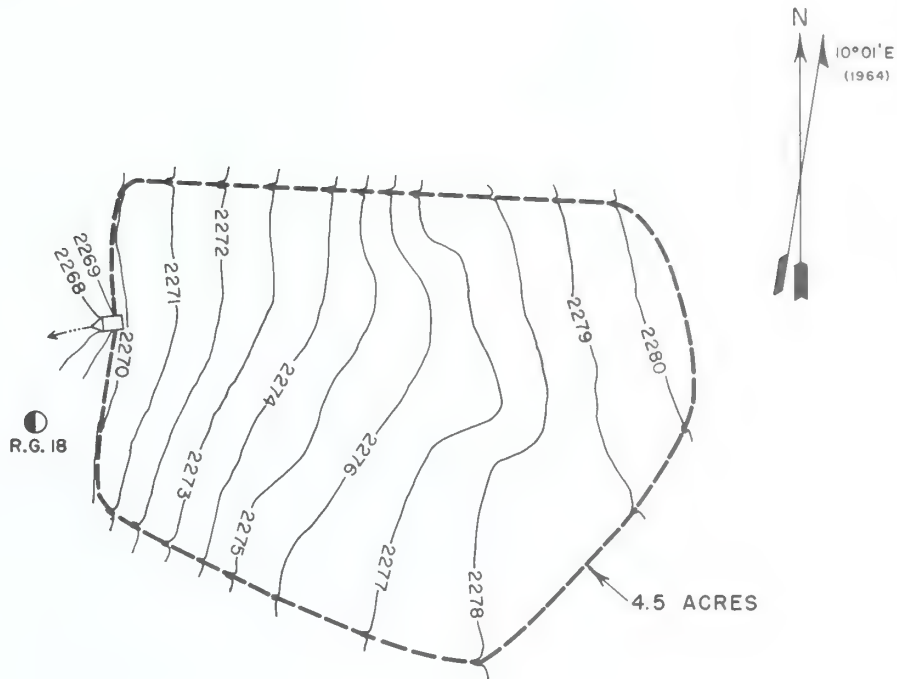
WATERSHED CONDITIONS: Rangeland, 100 percent. Low good level of management; stocking rate, 16 animal units per section.

GENERALLY REPRESENTS: Deep upland range sites of the Edwards Plateau land resource area (I-81) in southwest Texas.

MONTHLY PRECIPITATION AND RUNOFF (inches)						SONORA, TEXAS		WATERSHED W-4				70.10				
						AREA — 4.5 ACRES										
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1966	P ¹ / _Q	1.13 .00	1.74 .00	1.12 .00	7.38 .25	2.00 .00	3.02 .00	1.70 .00	5.94 .00	3.39 .00	1.78 .00	T .00	.00 .00	28.60 .25		
1967	P ¹ / _Q	.08 .00	.65 .00	.09 .00	1.59 .00	2.27 .00	.24 .00	3.60 .00	2.07 .01	5.33 .00	1.49 .00	2.45 .00	1.07 .00	20.93 .01		
STA AVG ² / _P (66-67) Q		.60 .00	.90 .00	.60 .00	4.48 .12	2.14 .00	1.63 .00	2.65 .00	4.00 T	4.36 .00	1.64 .00	1.22 .00	.54 .00	24.76 .12		
MEAN P ³ / _{45 YR}		1.01	1.02	.96	1.69	2.88	2.74	2.08	1.75	3.08	2.17	.89	1.21	21.48		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1966	4-30	.32	4-30	.20	4-30	.24	4-30	.25	4-30	.25	4-30	.25	4-30	.25	4-30	.25
1967	8-17	.01	8-17	.01	8-17	.01	8-17	.01	8-17	.01	8-17	.01	8-17	.01	8-17	.01
MAXIMUMS FOR PERIOD OF RECORD																
1966 To 1967	4-30 1966	.32	4-30 1966	.20	4-30 1966	.24	4-30 1966	.25	4-30 1966	.25	4-30 1966	.25	4-30 1966	.25	4-30 1966	.25
NOTES: Watershed conditions: Rangeland - 100 percent; range in low good condition. ¹ / _Q Precipitation data from rain gage 18. ² / _P Precipitation and runoff records began January 1966. ³ / _P Mean P based on 45-yr. (1923-67) record period at Texas Agricultural Experiment Station, Substation No. 14, 18 miles south of Sonora, Tex.																
1966 SELECTED RUNOFF EVENT						SONORA, TEXAS		WATERSHED W-4				70.10				
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
Event of April 30, 1966																
	RG 18		4-30	RG	18		4-30	1230	.0000	.0000						
4-13	.56	.0000		1111	.00	.00		1240	.0003	.0003	T					
4-17	.34	.0000		1121	.30	.05		1246	.0020	.0001						
4-22	.06	.0000		1126	.48	.09		1250	.0058	.0004						
4-23	.39	.0000		1141	.24	.15		1254	.0173	.0011						
4-24	1.19	.0000		1151	.12	.17		1257	.0642	.0027						
4-25	.02	.0000		1206	.00	.17		1300	.2107	.0096						
4-28	.39	.0000		1211	.24	.19		1304	.2774	.0260						
4-29	1.05	.0000		1221	1.26	.40		1308	.3007	.0453						
				1236	.36	.49		1312	.3131	.0657						
				1241	1.20	.59		1314	.3168	.0762						
				1246	1.08	.68		1318	.3114	.0971						
				1251	5.40	1.13		1322	.2876	.1171						
				1256	4.56	1.51		1326	.2525	.1351						
				1301	5.76	1.99		1330	.2011	.1502						
				1311	3.06	2.50		1334	.1694	.1626						
				1321	1.68	2.78		1338	.1479	.1732						
				1331	.84	2.92		1346	.1059	.1901						
				1341	.60	3.02		1354	.0728	.2019						
				1401	.42	3.16		1402	.0586	.2106						
				1421	.24	3.24		1410	.0460	.2175						
				1441	.36	3.36		1420	.0335	.2240						
								1430	.0277	.2290						
								1448	.0212	.2364						
								1500	.0126	.2396						
								1520	.0062	.2428						
								1550	.0030	.2453						
								1600	.0018	.2457						
								1610	.0008	.2459						
								1640	.0003	.2461						
								1800	.0002	.2464						
								2000	.0000	.2466						
NOTE: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 4.537.																



SONORA, TEXAS WATERSHED W-4



LEGEND

- WATERSHED BOUNDARY
- 2280 — CONTOUR
- ▭ GAGING STATION
- RECORDING RAIN GAGE

SCALE IN FEET



SONORA, TEXAS
WATERSHED
W-4

SONORA, TEXAS WATERSHED W-5

LOCATION: Edwards County, Tex.; 28 miles (highway) south of Sonora; East Fork Devils River, Devils River, Rio Grande Basin.

AREA: 7.2 acres

<u>SLOPES:</u>	Slope—Percent	0-3	3-8
	Percent of area	0	100

SOILS: Residual, derived from highly calcareous limestones.

Type	Per- cent of area	Topsoil			Subsoil		Substratum		Internal drainage
		Avg. depth (in.)	Structure	Perme- ability	Structure	Perme- ability	Avg. depth to(in.)	Perme- ability	
Tarrant stony clay	100	5	Strong medium to fine granular	Moderate	-----	-----	5	Moderately slow	Rapid

<u>EROSION:</u>	Erosion class	1	2
	Percent of area	0	100

<u>LAND CAPABILITY:</u>	Class	I	II	III	IV	V	VI
	Percent of area	0	0	0	0	0	100

GEOLOGY: Edwards and associated limestones of Lower Cretaceous age. Alternating beds of hard limestone and marly limestone overlying hard limestone, jointed and cavernous, thickness 20 to 65 ft. Strike N26°W, dip S54°W at 4.5 feet per mile. Source of data: Geology and Groundwater Studies in Part of the Edwards Plateau of Texas, Including Sutton and Adjacent Counties, U. S. Dept. Agr., ARS 41-103, April 1966.

SURFACE DRAINAGE: Good; no well-defined drainageways; terraces collect runoff at lower side of watershed; terraces 400 feet long each side of runoff measuring flume.

CHARACTER OF FLOW: Ephemeral, continuous.

INSTRUMENTATION: Runoff: Type H-4.5 flume, 12-hr. chart. Precipitation: One weighing-recording rain gage, 12-hr. chart.

WATERSHED CONDITIONS: Rangeland, 100 percent. Low poor level of management; stocking rate, 48 animal units per section.

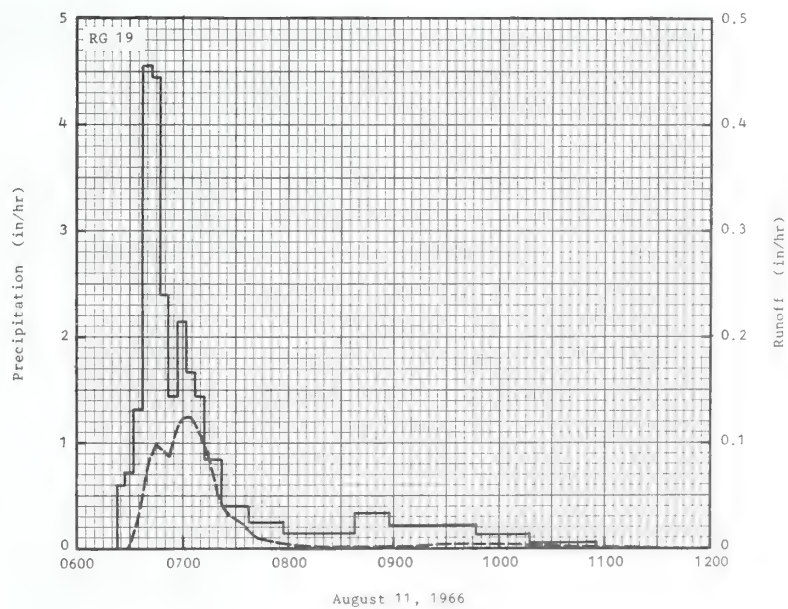
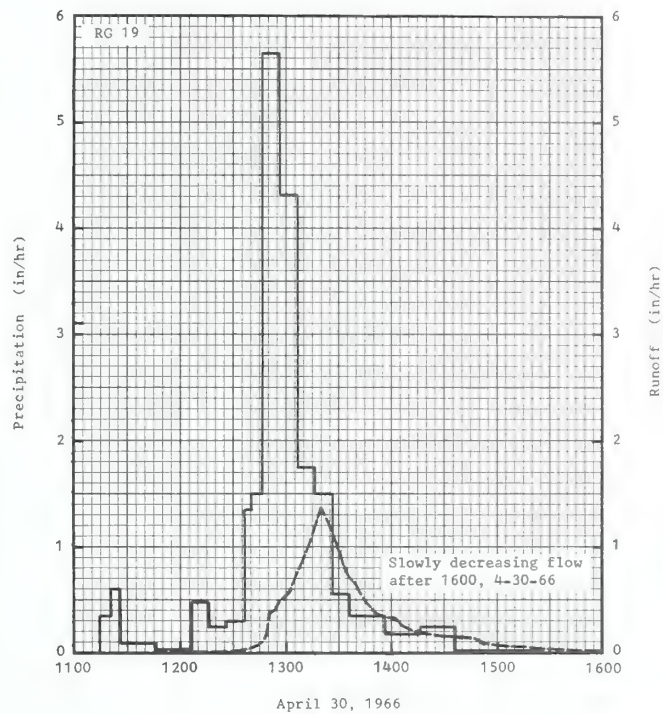
GENERALLY REPRESENTS: Low stony hills range sites of the Edwards Plateau land resource area (I-81) in southwest Texas.

MONTHLY PRECIPITATION AND RUNOFF (inches)						SONORA, TEXAS		WATERSHED W-5		70.11						
						AREA — 7.2 ACRES										
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1966 p ¹ / _Q	1.02 .00	1.09 .00	1.28 .00	6.67 1.15	1.86 .04	2.72 .01	1.38 .00	5.84 .13	2.60 .00	1.54 .00	T .00	.00 .00	26.00 1.33			
1967 p ¹ / _Q	.08 .00	.55 .00	.08 .00	1.48 .00	2.34 .02	.29 .00	3.28 .01	2.16 T	4.65 .00	1.50 .00	2.09 .00	1.05 .00	19.55 .03			
STA AVG ² / _P (66-67) Q	.55 .00	.82 .00	.68 .00	4.08 .58	2.10 .03	1.50 T	2.33 T	4.00 .06	3.62 .00	1.52 .00	1.04 .00	.52 .00	22.76 .67			
MEAN P ³ / _{45 YR}	1.01	1.02	.96	1.69	2.88	2.74	2.08	1.75	3.08	2.11	.89	1.21	21.48			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1966	4-30	1.38	4-30	.79	4-30	1.01	4-30	1.08	4-30	1.08	4-30	1.08	4-29	1.13	4-24	1.15
1967	5-31	.05	5-31	.01	5-31	.01	5-31	.01	5-30	.02	5-30	.02	5-30	.02	5-30	.02
MAXIMUMS FOR PERIOD OF RECORD																
1966 To 1967	4-30 1966	1.38	4-30 1966	.79	4-30 1966	1.01	4-30 1966	1.08	4-30 1966	1.08	4-30 1966	1.08	4-29 1966	1.13	4-24 1966	1.15
NOTES: Watershed conditions: Rangeland - 100 percent; range overgrazed, low poor condition. ¹ / _P Precipitation data from rain gage 19. ² / _P Precipitation and runoff records began January 1966. ³ / _P Mean P based on 45-yr. (1923-67) record period at the Texas Agricultural Experiment Station, Substation No. 14, 18 miles south of Sonora, Tex.																
1966 SELECTED RUNOFF EVENTS						SONORA, TEXAS		WATERSHED W-5		70.11						
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
Event of April 30, 1966																
	RG 19			RG	19		4-30	1210	.0000	.0000						
4-13	.37	.0000	4-30	1114	.00	.00		1218	.0009	T						
4-17	.27	.0000		1121	.34	.04		1222	.0046	.0002						
4-22	.05	.0000		1126	.60	.09		1228	.0112	.0011						
4-23	.32	.0000		1146	.09	.12		1234	.0165	.0024						
4-24	1.28	.0163		1206	.03	.13		1238	.0285	.0039						
4-25	.00	T		1216	.48	.21		1242	.0471	.0064						
4-28	.37	.0000		1226	.24	.25		1245	.0634	.0091						
4-29	.88	.0551		1236	.30	.30		1248	.1691	.0145						
				1240	1.35	.39		1250	.3744	.0256						
				1246	1.50	.54		1254	.4300	.0524						
				1256	5.64	1.48		1258	.5295	.0843						
				1306	4.32	2.20		1302	.5681	.1209						
				1316	1.74	2.49		1306	.7422	.1650						
				1326	1.50	2.74		1310	.8824	.2190						
				1336	.54	2.83		1314	1.0903	.2840						
				1356	.36	2.95		1318	1.2829	.3640						
				1416	.18	3.01		1320	1.3789	.4083						
				1436	.24	3.09		1322	1.2990	.4530						
				1526	.02	3.11		1326	1.1587	.5350						
								1330	.9532	.6053						
								1334	.7639	.6625						
								1338	.6588	.7095						
								1342	.5496	.7500						
								1346	.4760	.7842						
								1352	.3806	.8272						
								1402	.3103	.8850						
								1410	.2248	.9208						
								1420	.1874	.9546						
								1432	.1533	.9888						
								1440	.1430	1.0087						
								1452	.1009	1.0328						
								1500	.0729	1.0443						
								1515	.0431	1.0585						
								1530	.0260	1.0672						
Continued on next page																
NOTE: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 7.260.																

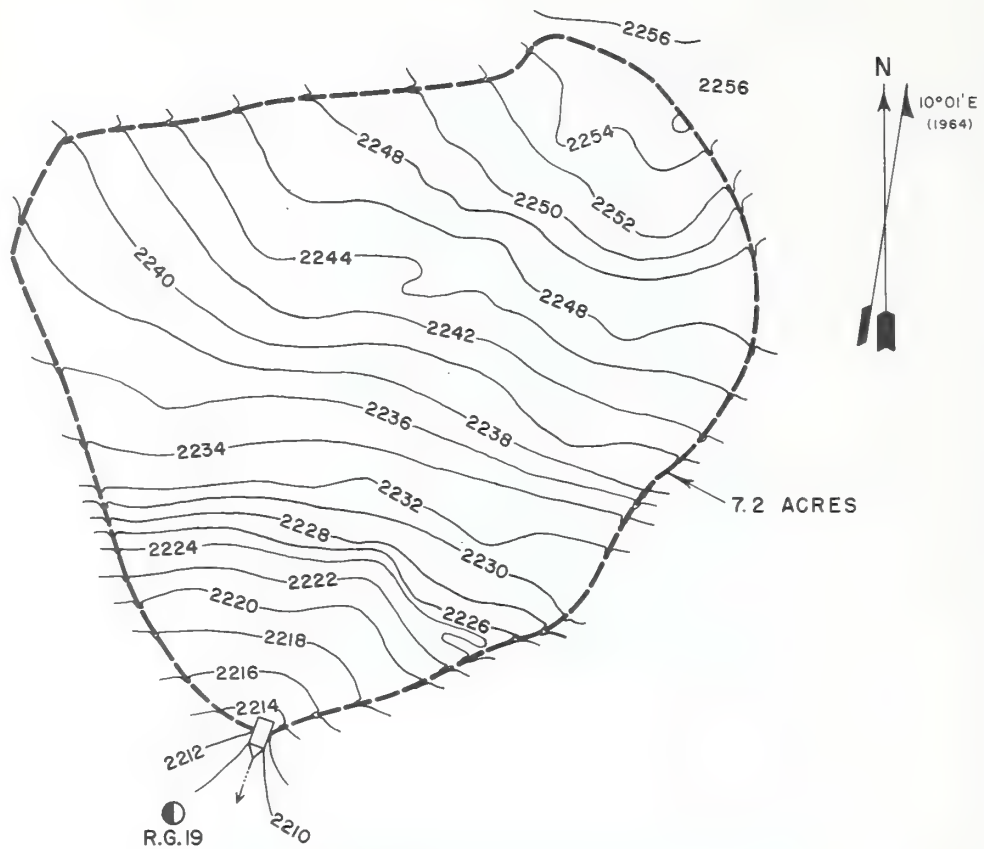
1966			SONORA, TEXAS				WATERSHED W-5				70.11
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)	
Event of April 30, 1966 - Continued											
							4-30	1550	.0119	1.0729	
								1610	.0068	1.0760	
								1630	.0035	1.0777	
								1700	.0014	1.0789	
								1720	.0005	1.0792	
								1740	T	1.0792	
								1748	.0000	1.0792	
Event of August 11, 1966											
	RG 19			RG	19		8-11	0629	.0000	.0000	
7-23	.16	.0000	8-11	0623	.00	.00		0633	.0149	.0003	
7-25	.06	.0000		0627	.60	.04		0637	.0515	.0027	
7-31	.25	.0000		0632	.72	.10		0641	.0857	.0074	
8-02	.14	.0000		0637	1.32	.21		0643	.0943	.0104	
8-03	.70	.0000		0642	4.56	.59		0645	.0987	.0136	
8-06	.39	.0000		0647	4.44	.96		0647	.0943	.0168	
				0652	2.40	1.16		0653	.0882	.0257	
				0657	1.44	1.28		0657	.1117	.0323	
				0702	2.16	1.46		0701	.1235	.0401	
				0707	1.68	1.60		0703	.1244	.0442	
				0712	1.44	1.72		0705	.1217	.0483	
				0722	.84	1.86		0709	.1093	.0561	
				0737	.40	1.96		0715	.0836	.0657	
				0757	.24	2.04		0719	.0537	.0704	
				0837	.14	2.13		0725	.0360	.0748	
				0857	.33	2.24		0735	.0208	.0797	
				0947	.22	2.42		0743	.0098	.0816	
				1017	.14	2.49		0758	.0044	.0834	
				1055	.06	2.53		0813	.0024	.0842	
								0833	.0005	.0847	
								0848	.0012	.0849	
								0913	.0022	.0857	
								0923	.0034	.0862	
								0933	.0038	.0868	
								0943	.0031	.0873	
								1013	.0031	.0889	
								1033	.0024	.0898	
								1053	.0009	.0903	
								1113	.0002	.0905	
								1130	.0000	.0905	
Watershed conditions: Rangeland - 100%. Range condition - low poor.											

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 7.260

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 7.260



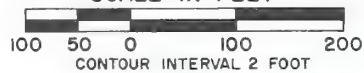
SONORA, TEXAS WATERSHED W-5



LEGEND

- WATERSHED BOUNDARY
- 2230 — CONTOUR
- ▭ GAGING STATION
- RECORDING RAIN GAGE

SCALE IN FEET



SONORA, TEXAS
WATERSHED
W-5

SONORA, TEXAS WATERSHED W-6

LOCATION: Edwards County, Tex.: 26 miles (highway) south of Sonora; East Fork Devils River, Devils River, Rio Grande Basin.

AREA: 6.9 acres

SLOPES:

Slope—Percent	0-3
Percent of area	100

SOILS: Residual, derived from highly calcareous limestones.

Type	Per- cent of area	Topsoil			Subsoil		Substratum		Internal drainage
		Avg. depth (in.)	Structure	Perme- ability	Structure	Perme- ability	Avg. depth to (in.)	Perme- ability	
Tarrant stony clay	100	8	Strong medium to fine granular	Moderate	Strong fine granular	Moderately slow	15	Moderately slow	Rapid

EROSION:

Erosion class	1	2
Percent of area	0	100

LAND CAPABILITY:

Class	I	II	III	IV	V	VI
Percent of area	0	0	0	0	0	100

GEOLOGY: Edwards and associated limestones of Lower Cretaceous age. Marly limestone, thickness 5 to 20 ft. Strike N26°W, dip S54°W at 4.5 feet per mile. Source of data: Geology and Groundwater Studies in Part of the Edwards Plateau of Texas, Including Sutton and Adjacent Counties, U. S. Dept. Agr., ARS 41-103, April 1966.

SURFACE DRAINAGE: Good; no well-defined drainageways; terraces collect runoff at lower side of watershed; terraces 350 feet long each side of runoff measuring flume.

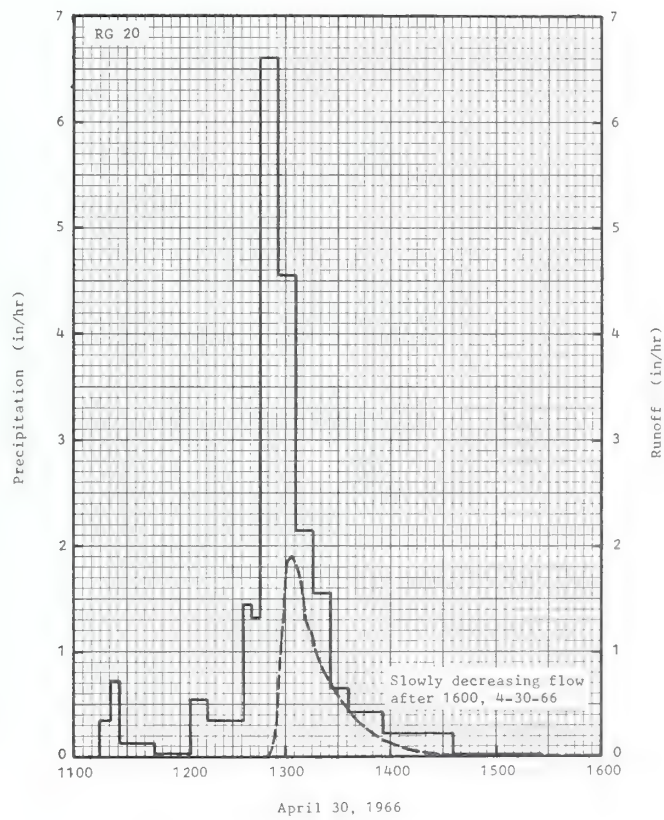
CHARACTER OF FLOW: Ephemeral, continuous.

INSTRUMENTATION: Runoff: Type H-4.5 flume, 12-hr. chart. Precipitation: One weighing-recording rain gage, 12-hr. chart.

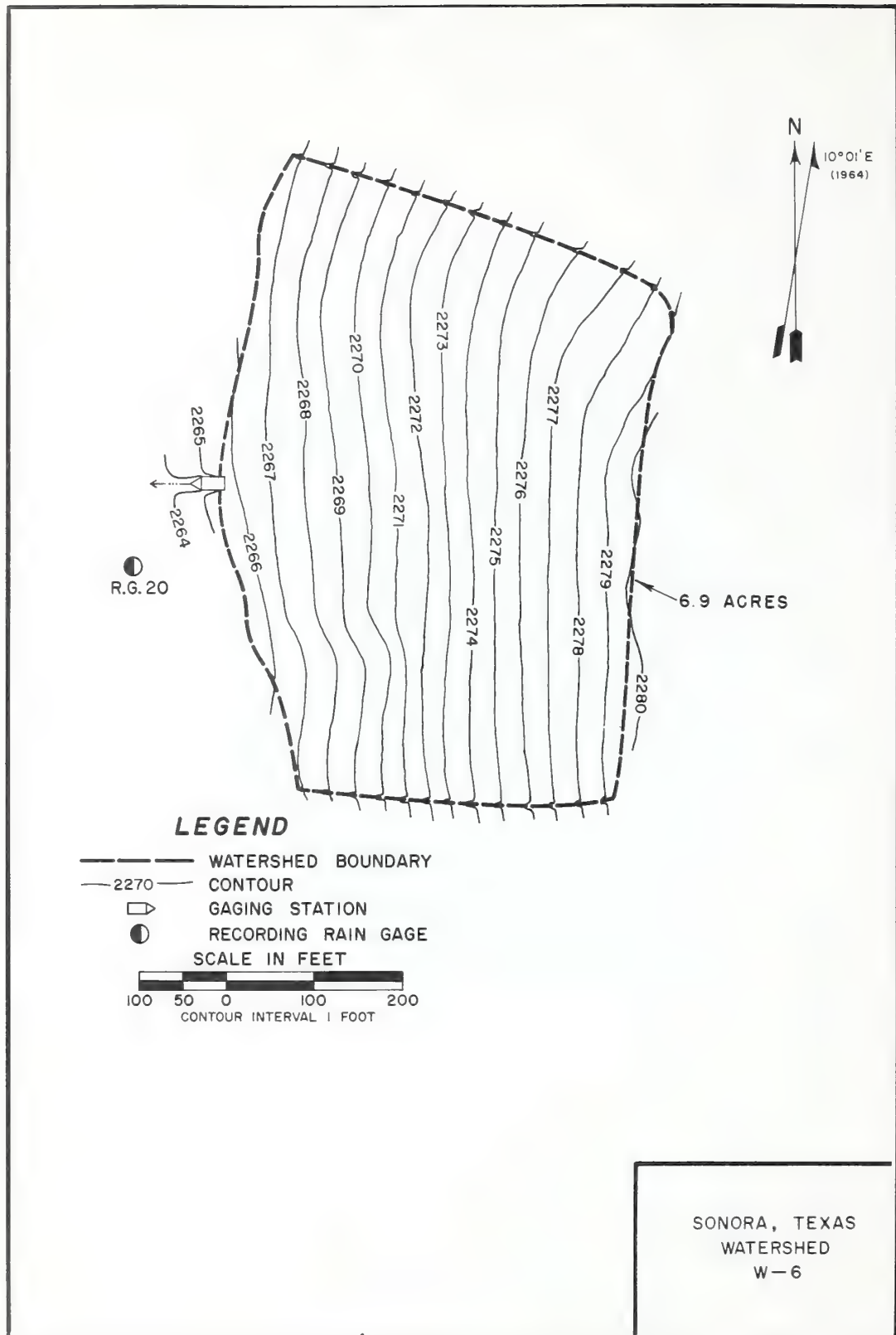
WATERSHED CONDITIONS: Rangeland, 100 percent. Poor level of management; stocking rate, 48 animal units per section.

GENERALLY REPRESENTS: Shallow upland range sites of the Edwards Plateau land resource area (I-81) in southwest Texas.

MONTHLY PRECIPITATION AND RUNOFF (inches)						SONORA, TEXAS								WATERSHED W-6		70.12
						AREA — 6.9 ACRES										
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1966 P ¹ / _Q	1.26 .00	1.10 .00	1.43 .00	7.37 .92	1.91 .04	2.63 .00	1.27 .00	6.65 .04	2.76 .00	1.68 .00	.10 .00	.00 .00	28.16 1.00			
1967 P ¹ / _Q	.08 .00	.62 .00	.08 .00	1.54 .00	2.06 .00	.13 .00	3.22 .00	1.82 .00	5.04 .00	1.49 .00	2.60 .00	.98 .00	19.66 .00			
STA AVG ² / _P (66-67) Q	.67 .00	.86 .00	.76 .00	4.46 .46	1.98 .02	1.38 .00	2.24 .00	4.24 .02	3.90 .00	1.58 .00	1.35 .00	.49 .00	23.91 .50			
MEAN P ² / _{45 YR}	1.01	1.02	.96	1.69	2.88	2.74	2.08	1.75	3.08	2.17	.89	1.21	21.48			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1966	4-30	1.90	4-30	.84	4-30	.91	4-30	.91	4-30	.91	4-30	.91	4-29	.91	4-24	.92
1967		.00		.00		.00		.00		.00		.00		.00		.00
MAXIMUMS FOR PERIOD OF RECORD																
1966 To 1967	4-30 1966	1.90	4-30 1966	.84	4-30 1966	.91	4-30 1966	.91	4-30 1966	.91	4-30 1966	.91	4-29 1966	.91	4-24 1966	.92
NOTES: Watershed conditions: Rangeland - 100 percent; range condition - poor. ¹ / _Q Precipitation data from rain gage 20. ² / _P Precipitation and runoff records began January 1966. ² / _{Mean P} based on 45-yr. (1923-67) record period at the Texas Agricultural Experiment Station, Substation No. 14, 18 miles south of Sonora, Tex.																
1966 SELECTED RUNOFF EVENT						SONORA, TEXAS						WATERSHED W-6		70.12		
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
Event of April 30, 1966																
	RG 20			RG	20		4-30	1246	.0000	.0000						
4-13	.40	.0000	4-30	1114	.00	.00		1250	.0008	.0000						
4-17	.26	.0000		1121	.34	.04		1252	.0394	.0004						
4-22	.06	.0000		1126	.72	.10		1254	.2616	.0054						
4-23	.43	.0000		1146	.12	.14		1256	.5369	.0184						
4-24	1.35	.0018		1206	.03	.15		1258	1.2345	.0479						
4-25	.02	T		1216	.54	.24		1300	1.6320	.0957						
4-28	.36	.0000		1236	.33	.35		1302	1.8656	.1547						
4-29	.98	.0062		1241	1.44	.47		1304	1.9038	.2176						
				1246	1.32	.58		1306	1.8106	.2795						
				1256	6.60	1.68		1308	1.6561	.3373						
				1306	4.56	2.44		1310	1.5177	.3901						
				1316	2.16	2.80		1312	1.3221	.4375						
				1326	1.56	3.06		1314	1.2059	.4796						
				1336	.66	3.17		1316	1.0745	.5176						
				1356	.42	3.31		1318	.9861	.5520						
				1436	.22	3.46		1322	.8303	.6121						
				1526	.02	3.48		1326	.7123	.6636						
								1330	.5939	.7077						
								1334	.4898	.7439						
								1338	.4045	.7737						
								1342	.3252	.7978						
								1348	.2396	.8253						
								1354	.1825	.8462						
								1400	.1336	.8617						
								1408	.0924	.8766						
								1420	.0543	.8907						
								1432	.0330	.8992						
								1440	.0245	.9030						
								1450	.0144	.9062						
								1500	.0091	.9081						
								1520	.0029	.9100						
								1530	.0012	.9103						
								1540	.0007	.9105						
								1600	.0004	.9107						
								1630	.0002	.9108						
								1710	.0000	.9109						
NOTE: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 6.957.																



SONORA, TEXAS WATERSHED W-6



SONORA, TEXAS WATERSHED W-7

LOCATION: Sutton County, Tex.; 10 miles northeast of Sonora; Lowrey Draw, East Fork Devils River, Devils River, Rio Grande Basin.

AREA: 12.2 acres

<u>SLOPES:</u>	Slope—Percent	0-3
	Percent of area	100

SOILS: Residual, derived from highly calcareous limestones.

Type	Per- cent of area	Topsoil			Subsoil		Substratum		Internal drainage
		Avg. depth (in.)	Structure	Perme- ability	Structure	Perme- ability	Avg. depth to (in.)	Perme- ability	
Valera clay	100	12	Strong medium to fine granular	Moderate	Strong medium granular	Moderate	26	Moderately slow	Medium

<u>EROSION:</u>	Erosion class	1
	Percent of area	100

<u>LAND CAPABILITY:</u>	Class	I	II	III	IV	V	VI
	Percent of area	0	0	100	0	0	0

GEOLOGY: Edwards and associated limestones of Lower Cretaceous age. Marly limestone, thickness 10 to 20 ft. Strike N26°W, dip S54°W at 4.5 feet per mile. Source of data: Geology and Groundwater Studies in Part of the Edwards Plateau of Texas, Including Sutton and Adjacent Counties, U. S. Dept. Agr., ARS 41-103, April 1966.

SURFACE DRAINAGE: Good; no well-defined drainageways; terraces collect runoff at lower side of watershed; terraces 350 feet long each side of runoff measuring flume.

CHARACTER OF FLOW: Ephemeral, continuous.

INSTRUMENTATION: Runoff: Type HL-4 flume, 12-hr. chart. Precipitation: One weighing-recording rain gage, 12-hr. chart.

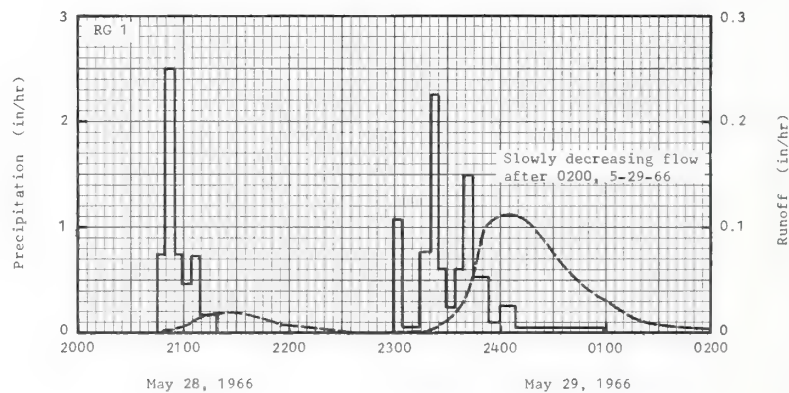
WATERSHED CONDITIONS: Rangeland, 100 percent. High fair level of management; variable stocking rate.

GENERALLY REPRESENTS: Deep upland range sites of the Edwards Plateau land resource area (I-81) in southwest Texas.

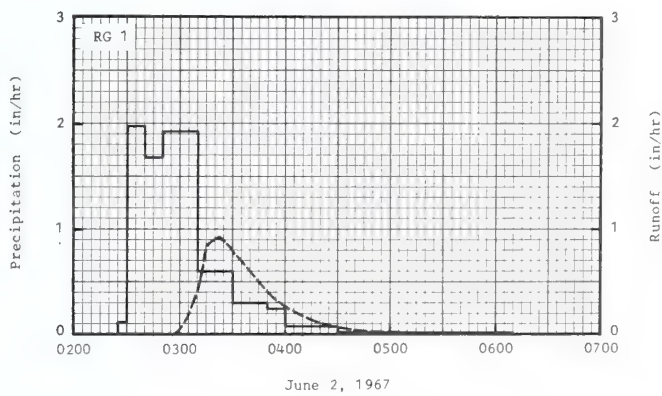
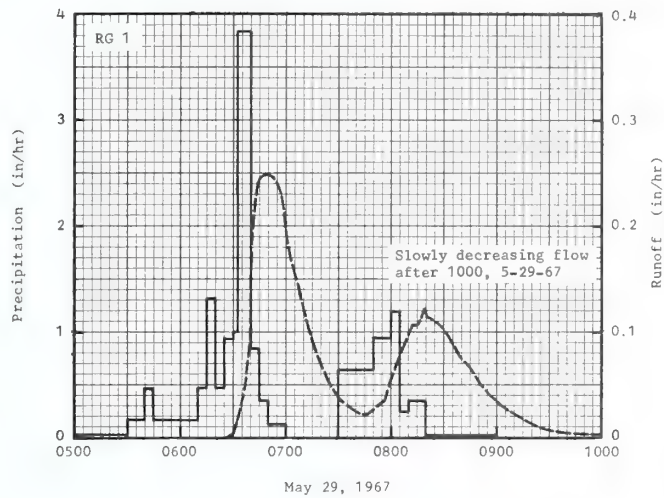
MONTHLY PRECIPITATION AND RUNOFF (inches)						SONORA, TEXAS								WATERSHED W-7		70.13
						AREA — 12.2 ACRES										
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1965 P ^{1/}	1.39	2.39	.27	1.09	4.62	1.12	.66	.86	.78	1.45	.25	1.07	15.95			
Q	.00	.00	.00	.00	.14	.00	.00	.00	.00	.00	.00	.00	.14			
1966 P ^{1/}	.71	1.14	.72	3.33	3.05	1.92	.24	1.00	2.63	.78	.08	.03	15.63			
Q	.00	.00	.00	.03	.19	.03	.00	.00	T	.00	.00	.00	.25			
1967 P ^{1/}	.02	.31	.89	1.24	2.99	2.89	2.17	.19	5.74	.78	2.84	1.37	21.43			
Q	.00	.00	.00	.13	.26	.73	.01	.00	.07	.00	.00	.00	1.20			
STA AVG ^{2/}	.71	1.28	.63	1.89	3.55	1.98	1.02	.68	3.05	1.00	1.06	.82	17.67			
(65-67) Q	.00	.00	.00	.05	.20	.25	T	.00	.02	.00	.00	.00	.52			
MEAN P ^{2/}	1.01	1.02	.96	1.69	2.88	2.74	2.08	1.75	3.08	2.17	.89	1.21	21.48			
45 YR																
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1965	5-17	.09	5-17	.06	5-17	.07	5-17	.07	5-17	.07	5-17	.07	5-16	.14	5-16	.14
1966	5-29	.11	5-28	.08	5-28	.11	5-28	.13	5-28	.13	5-28	.13	5-27	.14	5-26	.19
1967	6-2	.91	6-2	.57	6-2	.66	6-2	.66	6-2	.66	6-2	.73	6-2	.73	6-2	.73
MAXIMUMS FOR PERIOD OF RECORD																
1965 To	6-2	.91	6-2	.57	6-2	.66	6-2	.66	6-2	.66	6-2	.73	6-2	.73	6-2	.73
1967	1967		1967		1967		1967		1967		1967		1967		1967	
NOTES: Watershed conditions: Rangeland - 100 percent; range condition - high fair. ^{1/} Precipitation data from rain gage 1. ^{2/} Precipitation and runoff records began January 1965. ^{3/} Mean P based on 45-yr. (1923-67) record period at the Texas Agricultural Experiment Station, Substation No. 14, 18 miles south of Sonora, Tex.																
1966 SELECTED RUNOFF EVENTS						SONORA, TEXAS								WATERSHED W-7		70.13
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
Event of May 28-29, 1966																
4-29	RG 1		5-28	RG	1		5-28	2047	.0000	.0000						
	.27	.0000		2045	.00	.00		2051	.0022	.0001						
4-30	.71	.0091		2049	.75	.05		2101	.0065	.0006						
5-01	.10	.0000		2055	2.50	.31		2109	.0127	.0019						
5-23	.03	.0000		2059	.75	.36		2113	.0152	.0028						
5-26	1.16	.0477		2104	.48	.40		2117	.0172	.0039						
5-27	.44	.0082		2109	.72	.46		2131	.0177	.0080						
				2119	.18	.49		2135	.0168	.0091						
				2259	.00	.49		2143	.0118	.0110						
				2304	1.08	.58		2156	.0069	.0130						
				2314	.06	.59		2211	.0027	.0142						
				2321	.77	.68		2231	.0013	.0148						
				2325	2.25	.83		2257	.0002	.0150						
				2329	.60	.87		2301	.0005	.0151						
				2334	.24	.89		2303	.0010	.0151						
				2339	.60	.94		2307	.0003	.0151						
				2345	1.50	1.09		2315	.0003	.0152						
				2354	.53	1.17		2317	.0009	.0152						
				2400	.10	1.18		2319	.0009	.0152						
			5-29	0009	.26	1.22		2321	.0025	.0153						
				0059	.06	1.27		2325	.0073	.0156						
								2329	.0104	.0162						
								2333	.0152	.0170						
								2339	.0286	.0192						
								2343	.0429	.0215						
								2347	.0750	.0253						
								2351	.0942	.0310						
								2355	.1071	.0377						
								2400	.1095	.0468						
								0006	.1111	.0578						
								0011	.1091	.0670						
								0021	.0957	.0841						
								0031	.0739	.0981						
								0041	.0553	.1091						
								0051	.0395	.1169						
Continued on next page																
NOTE: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 12.302.																

1967			SELECTED RUNOFF EVENTS				SONORA, TEXAS		WATERSHED W-7				70.13	
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF							
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)				
Event of June 2, 1967 - Continued														
			6-02	0610	.02	1.68	6-02	0320	.9031	.1596				
								0322	.9126	.1899				
								0324	.8963	.2200				
								0328	.8349	.2780				
								0332	.7645	.3316				
								0338	.6505	.4024				
								0344	.5092	.4602				
								0350	.4018	.5065				
								0356	.2958	.5411				
								0404	.2326	.5764				
								0412	.1622	.6029				
								0420	.1107	.6210				
								0428	.0750	.6333				
								0436	.0470	.6414				
								0444	.0341	.6467				
								0452	.0226	.6506				
								0504	.0108	.6537				
								0516	.0056	.6554				
								0536	.0026	.6567				
								0546	.0013	.6570				
								0556	.0009	.6572				
								0606	.0003	.6573				
								0616	.0001	.6573				
								0626	.0000	.6573				

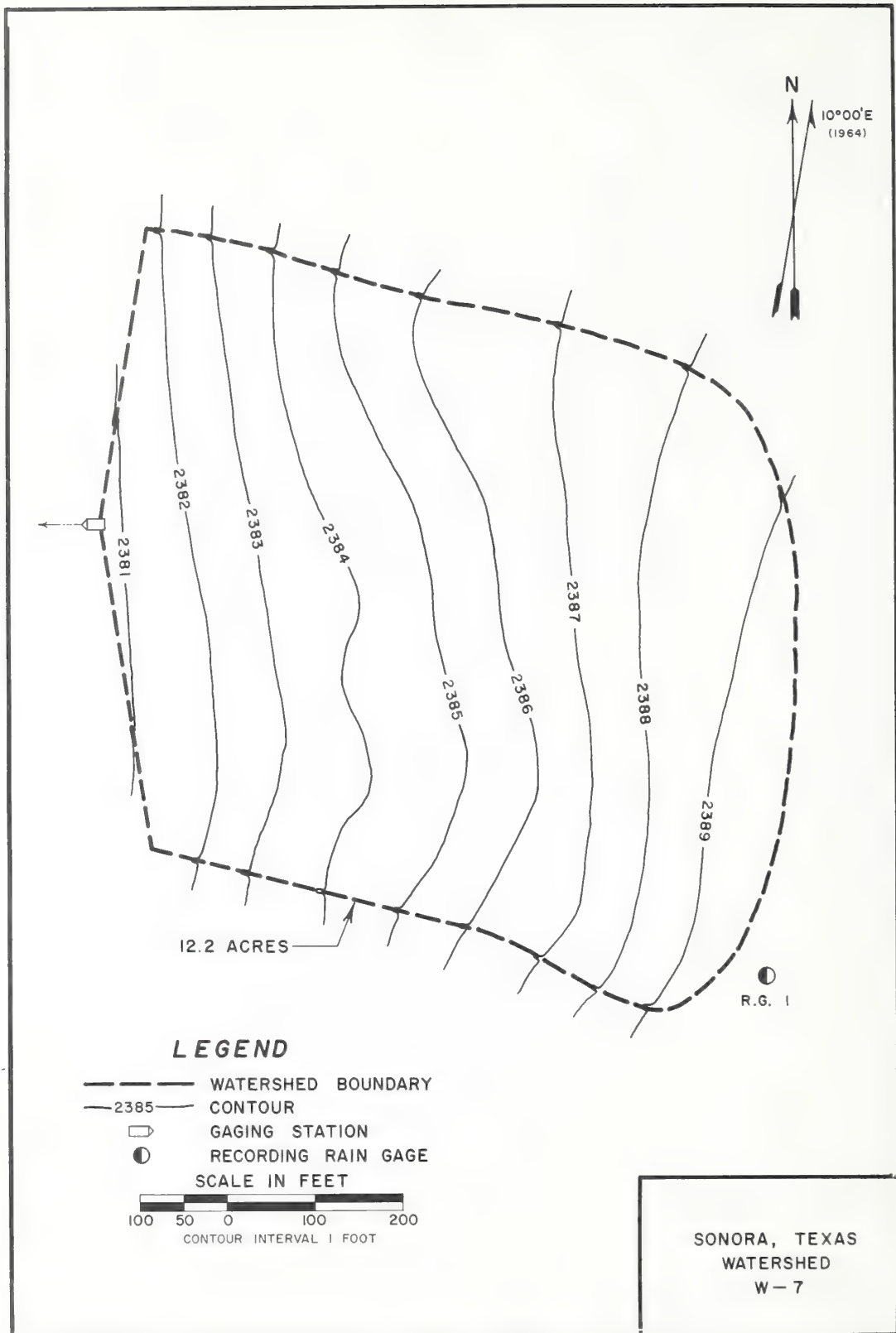
NOTE: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 12.302.



SONORA, TEXAS WATERSHED W-7



SONORA, TEXAS WATERSHED W-7



MONTHLY PRECIPITATION AND RUNOFF (inches)						TREYNOR, IOWA						AREA—74.5 ACRES			WATERSHED 1	
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967 P 1/ O	.69 .17	.10 .26	1.14 .16	2.59 .17	3.78 .18	18.79 11.66	2.10 .27	2.65 .20	3.48 .22	2.39 .20	.09 .20	.45 .16	38.25 13.85			
STA AV 2/P (64-67) Q	.62 .25	.60 .55	1.23 .72	2.94 .41	4.43 .82	9.88 4.20	3.42 .44	3.66 .40	5.61 .91	1.11 .26	.73 .24	.66 .23	34.89 9.43			
MEAN P 3/ 97 YR	.73	.91	1.41	2.60	3.72	4.69	3.72	3.43	3.12	2.01	1.17	.86	28.37			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
	DATE	RATE	1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
1967	6-20	5.84	6-20	3.15	6-20	4.16	6-20	4.22	6-20	4.23	6-20	4.25	6-20	4.26	6 -4	5.98
MAXIMUMS FOR PERIOD OF RECORD																
1964 TO 19 67	6-20 1967	5.84	6-20 1967	3.15	6-20 1967	4.16	6-20 1967	4.22	6-20 1967	4.23	6-20 1967	4.25	6-20 1967	4.26	6 -4	5.98
NOTES: Watershed conditions: 95% contoured corn; 5% gullies and grassed waterways. 1/ Precipitation from gage 117 before Apr. 4 and after Nov. 1; Thiessen average of gages 116, 117, and 118 for remainder of year. 2/ Precipitation records began Jan. 1, 1964. Runoff records began Feb. 10, 1964. Jan. 1 - Feb. 10, 1964 runoff estimated and included in average. 3/ Mean P based on 97-yr (1871-1967) U. S. Weather Bureau record period at Omaha, Nebr.																
1967 SELECTED RUNOFF EVENTS						TREYNOR, IOWA WATERSHED 1										
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
Event of June 14, 1967																
	3 RG 4/			RG	117		6-14	0519	.0009	.000						
5-15	.00	.0053	6-14	0510	.00	.00		0521	.0010	.000						
5-16	.00	.0039		0513	.80	.04		0523	.0012	.000						
5-17	.00	.0041		0518	.24	.06		0526	.0022	.000						
5-18	.00	.0037		0521	2.00	.16		0529	.0045	.000						
5-19	.00	.0037		0524	2.40	.28		0530	.0062	.000						
5-20	.00	.0041		0526	3.00	.38		0531	.0180	.001						
5-21	.00	.0041		0528	6.60	.60		0533	.776	.012						
5-22	.00	.0041		0531	1.20	.66		0534	1.10	.028						
5-23	.00	.0041		0541	.18	.69		0535	1.36	.049						
5-24	.00	.0037		0552	.16	.72		0536	2.58	.081						
5-25	.00	.0034		0621	.06	.75		0537	2.84	.126						
5-26	.00	.0030		0651	.04	.77		0538	3.13	.177						
5-27	.02	.0040						0539	2.80	.226						
5-28	.52	.0072						0540	2.23	.268						
5-29	.24	.0054		RG	116	.75		0542	1.44	.328						
5-30	1.62	.0142		RG	118	.78		0543	1.14	.349						
5-31	.88	.0120						0546	.682	.395						
6-1	.06	.0088		3 RG	AVG 4/	.77		0550	.295	.425						
6-2	.00	.0065						0559	.0962	.452						
6-3	.00	.0056						0612	.0507	.468						
6-4	1.30	.1943						0625	.0368	.477						
6-5	2.46	1.6156						0634	.0220	.482						
6-6	.00	.0096						0643	.0088	.484						
6-7	2.25	1.6909						0700	.0045	.486						
6-8	.00	.0149						0709	5/ .0041	.486						
6-9	2.54	1.8484														
6-10	.16	.0216														
6-11	.96	.5408														
6-12	.03	.0483														
6-13	.00	.0176														
6-14	6/ .05	7/.0042														
Watershed conditions: 95% - Contoured corn, 6-8 in. tall, approx. 8% canopy, rotary hoed 10 days prior to event; 5% - gullies and grassed waterways, grass 12-18 in. tall.																
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 75.121. FOR TOPOGRAPHIC MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1964, P. 71.1-5. 4/ THIESSEN AVERAGE OF THREE RECORDING RAIN GAGES. 5/ BEGINNING OF NEXT EVENT. 6/ RAINFALL FROM 0320 TO 0510. 7/ RUNOFF PRIOR TO 0519.																

1967			TREYNOR, IOWA				WATERSHED 1			
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)
Event of June 20 and 21, 1967										
	3 RG 1/			RG	117		6-20	2057	.0007	.000
5-21	.00	.0041	6-20	2056	.00	.00		2101	.0010	.000
5-22	.00	.0041		2104	.22	.03		2104	.0028	.000
5-23	.00	.0041		2107	3.00	.18		2109	.0057	.000
5-24	.00	.0037		2113	1.50	.33		2111	.0077	.001
5-25	.00	.0034		2117	2.55	.50		2115	.0129	.001
5-26	.00	.0030		2124	3.34	.89		2119	.0627	.003
5-27	.02	.0040		2133	6.53	1.87		2122	.173	.009
5-28	.52	.0072		2144	4.20	2.64		2125	.647	.029
5-29	.24	.0054		2148	3.90	2.90		2127	1.50	.068
5-30	1.62	.0142		2152	1.20	2.98		2129	3.55	.148
5-31	.88	.0120		2159	4.11	3.46		2131	4.95	.299
6 -1	.06	.0088		2204	3.72	3.77		2132	5.52	.381
6 -2	.00	.0065		2210	2.90	4.06		2133	5.84	.469
6 -3	.00	.0056		2216	5.50	4.61		2134	5.17	.577
6 -4	1.30	.1943		2220	1.05	4.68		2135	4.64	.654
6 -5	2.46	1.6156		2222	1.20	4.72		2136	4.00	.721
6 -6	.00	.0096		2227	1.56	4.85		2138	3.49	.853
6 -7	2.25	1.6909		2231	3.00	5.05		2140	3.33	.959
6 -8	.00	.0149		2239	2.33	5.36		2141	3.28	1.011
6 -9	2.54	1.8484		2247	1.57	5.57		2142	3.55	1.078
6-10	.16	.0216		2250	4.00	5.77		2144	4.03	1.197
6-11	.96	.5408		2258	1.13	5.92		2145	4.38	1.279
6-12	.03	.0483		2308	.36	5.98		2146	4.07	1.345
6-13	.00	.0176		2314	1.00	6.08		2147	3.89	1.407
6-14	.85	.5213		2350	.10	6.14		2150	2.73	1.572
6-15	.60	.2312						2151	2.23	1.611
6-16	.20	.1266		RG	116	5.78		2153	2.02	1.685
6-17	.00	.0149		RG	118	6.20		2154	2.11	1.718
6-18	.00	.0135						2156	2.58	1.791
6-19	.00	.0118	3 RG	AVG 1/	6.09			2157	2.89	1.844
6-20	.00	2/ .0121						2159	3.18	1.939
								2201	3.36	2.054
								2202	3.08	2.104
								2209	2.60	2.437
								2211	2.66	2.519
								2213	3.03	2.619
								2214	3.38	2.669
								2215	3.68	2.738
								2216	3.83	2.796
								2217	3.68	2.855
								2218	3.47	2.911
								2219	3.13	2.976
								2221	2.25	3.060
								2223	1.56	3.127
								2225	1.30	3.171
								2226	1.36	3.192
								2227	1.24	3.218
								2129	1.32	3.257
								2230	1.43	3.284
								2231	1.85	3.309
								2232	1.90	3.339
								2233	2.13	3.370
								2234	1.91	3.410
								2236	1.60	3.465
								2237	1.51	3.489
								2238	1.54	3.519
								2240	1.71	3.570
								2241	1.71	3.597
								2243	1.41	3.652
								2247	1.16	3.738
								2248	1.13	3.756
								2249	1.16	3.778
								2252	1.53	3.840
								2253	1.41	3.869

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 75.121. 1/ THIESSEN AVERAGE OF THREE RECORDING RAIN GAGES.
2/ RUNOFF PRIOR TO 2057.

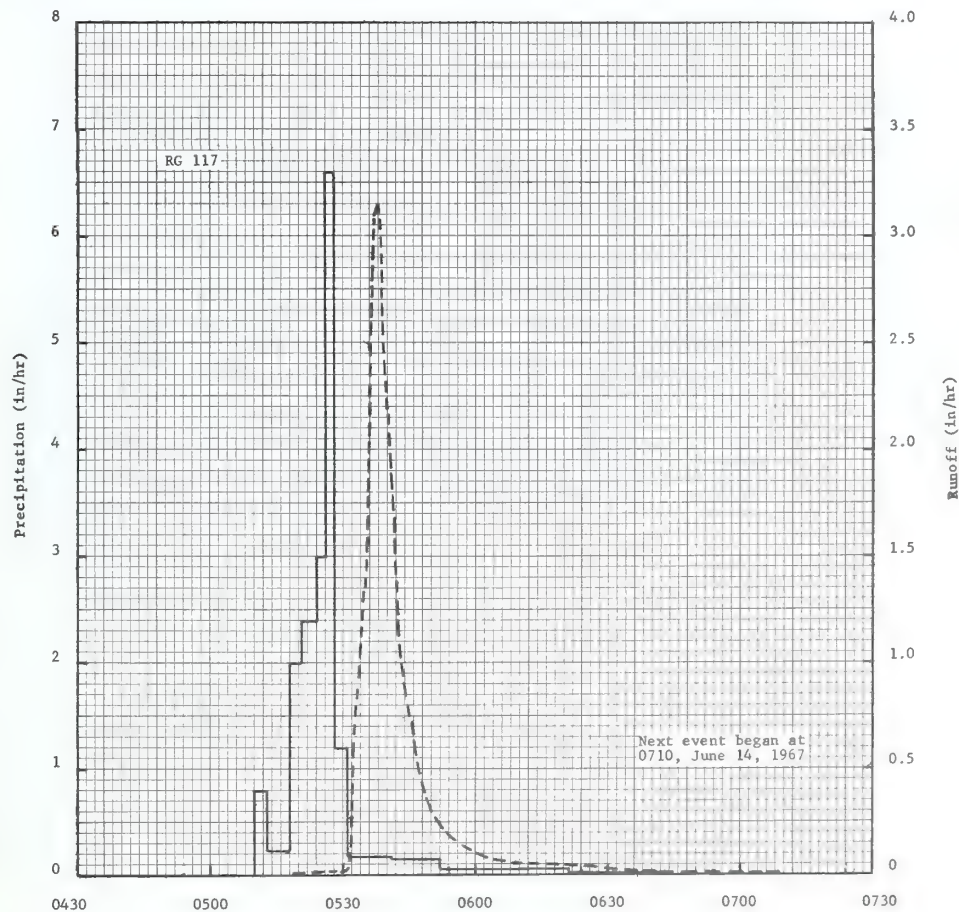
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 75.121. 1/ THIESSEN AVERAGE OF THREE RECORDING RAIN GAGES.
2/ RUNOFF PRIOR TO 2057.

1967			SELECTED RUNOFF EVENTS				TREYNOR, IOWA			WATERSHED 1		
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF					
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)		
Event of June 20, 21-Continued												
								2254	1.46	3.892		
								2257	1.14	3.956		
								2259	.877	3.988		
								2306	.371	4.059		
								2308	.289	4.070		
								2309	.300	4.075		
								2311	.279	4.084		
								2314	.494	4.102		
								2315	.613	4.113		
								2317	.572	4.131		
								2319	.486	4.150		
								2323	.279	4.175		
								2326	.189	4.186		
								2331	.0962	4.197		
								2338	.0427	4.205		
								2339	.0382	4.206		
								2341	.0326	4.207		
								2400	.0088	4.214		
							6-21	0149	1/.0010	4.223		
Watershed conditions:												
95% - Contoured corn,												
7-10 in. tall, 15%												
canopy, 50% cultivated												
first time prior to												
event;												
5% - gullies and grassed												
waterways, grass 18-24 in.												
tall.												

Watershed conditions:

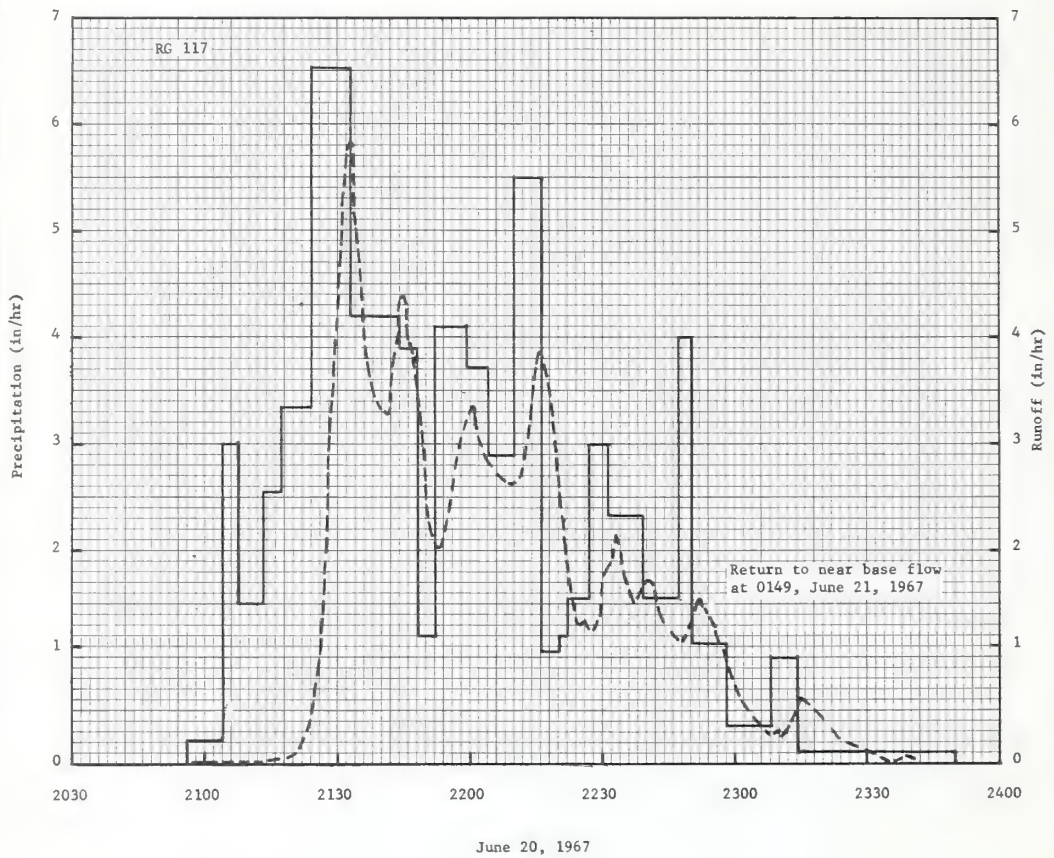
95% - Contoured corn,
7-10 in. tall, 15%
canopy, 50% cultivated
first time prior to
event;
5% - gullies and grassed
waterways, grass 18-24 in.
tall.

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 75.121. 1/ RETURN TO NEAR BASE FLOW.



June 14, 1967

TREYNOR, IOWA WATERSHED 1



TREYNOR, IOWA WATERSHED 1

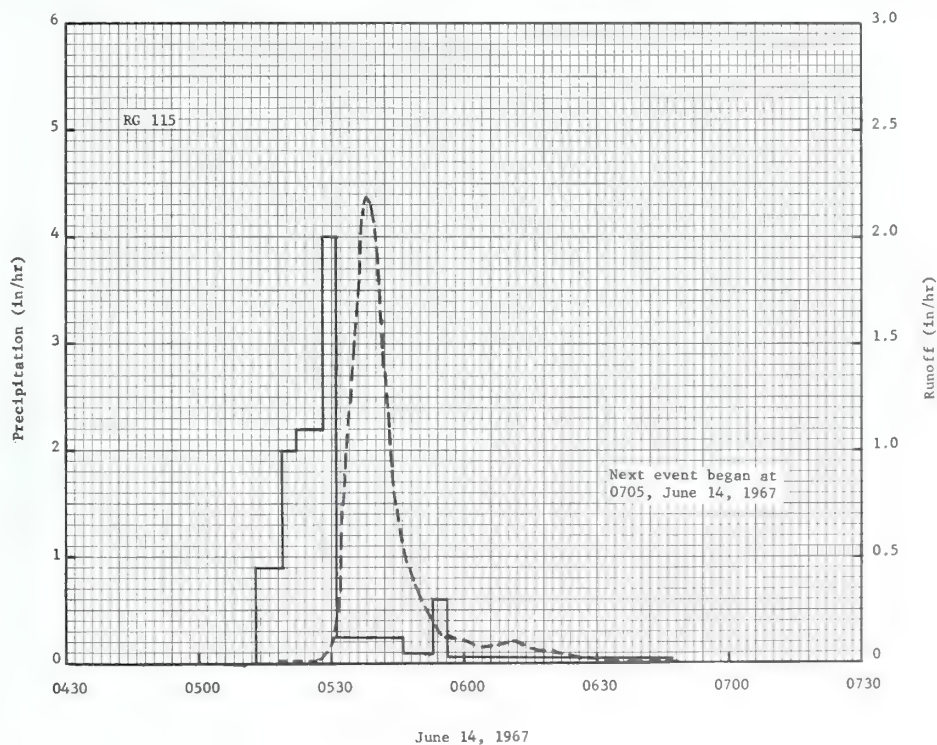
MONTHLY PRECIPITATION AND RUNOFF (inches)						TREYNOR, IOWA						AREA—82.8 ACRES		WATERSHED 2		
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967 P ₁	.69	.10	1.14	2.67	3.49	18.50	2.00	2.59	3.47	2.42	.09	.45	37.61			
Q	.25	.32	.23	.17	.15	10.47	.28	.25	.22	.22	.22	.17	12.95			
STA AV 2/P	.62	.60	1.22	2.93	4.31	9.83	3.34	3.48	5.59	1.09	.74	.66	34.41			
(64-67) Q	.25	.66	.75	.39	.82	3.91	.36	.37	.81	.25	.23	.22	9.02			
MEAN P ₃																
97 YR	.73	.91	1.41	2.60	3.72	4.69	3.72	3.43	3.12	2.01	1.17	.86	28.37			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	6-20	4.87	6-20	2.70	6-20	3.69	6-20	3.78	6-20	3.79	6-20	3.79	6-20	3.81	6-4	5.53
MAXIMUMS FOR PERIOD OF RECORD																
1964 TO 1967	6-20	4.87	6-20	2.70	6-20	3.69	6-20	3.78	6-20	3.79	6-20	3.79	6-20	3.81	6-4	5.53
1967	1967	1967	1967	1967	1967	1967	1967	1967	1967	1967	1967	1967	1967	1967	1967	1967
NOTES: Watershed conditions: 95% contoured corn; 5% gullies and grassed waterways. 1/ Precipitation from gage 117 before Apr. 4 and after Nov. 1; Thiessen average of gages 115, 116, and 118 for remainder of year. 2/ Precipitation records began Jan. 1, 1964. Runoff records began Feb. 3, 1964. Jan. 1 - Feb. 3, 1964 runoff estimated and included in average. 3/ Mean P based on 97-yr (1871-1967) U. S. Weather Bureau record period at Omaha, Nebr.																
1967 SELECTED RUNOFF EVENTS						TREYNOR, IOWA WATERSHED 2										
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
Event of June 14, 1967																
	3 RG 4/			RG	115		6-14	0518	.0005	.000						
5-15	.00	.0040	6-14	0513	.00	.00		0522	.0010	.000						
5-16	.00	.0043		0519	.90	.09		0524	.0020	.000						
5-17	.00	.0038		0522	2.00	.19		0526	.0038	.000						
5-18	.00	.0035		0528	2.20	.41		0527	.0044	.000						
5-19	.00	.0034		0531	4.00	.61		0530	.0694	.002						
5-20	.00	.0035		0546	.24	.67		0531	.137	.004						
5-21	.00	.0035		0553	.09	.68		0533	.817	.017						
5-22	.00	.0034		0556	.60	.71		0535	1.51	.056						
5-23	.00	.0035		0647	.04	.74		0537	2.03	.115						
5-24	.00	.0032		0656	.27	.78		0538	2.18	.150						
5-25	.00	.0024						0539	2.12	.186						
5-26	.00	.0027		RG	116	.75		0540	1.97	.220						
5-27	.00	.0029		RG	118	.78		0541	1.68	.250						
5-28	.53	.0059						0543	1.13	.297						
5-29	.24	.0057		3 RG	AVG 4/	.77		0545	.723	.328						
5-30	1.44	.0167						0547	.470	.347						
5-31	.82	.0119						0550	.316	.367						
6-1	.08	.0068						0553	.198	.380						
6-2	.00	.0040						0554	.154	.383						
6-3	.00	.0038						0557	.122	.390						
6-4	1.28	.1862						0604	.0750	.401						
6-5	2.43	1.4917						0612	.102	.413						
6-6	.00	.0064						0614	.0788	.416						
6-7	2.30	1.3569						0620	.0528	.423						
6-8	.01	.0117						0626	.0259	.426						
6-9	2.44	1.8313						0632	.0144	.428						
6-10	.18	.0222						0638	.0098	.430						
6-11	.98	.5915						0643	.0070	.430						
6-12	.03	.0374						0651	.0051	.431						
6-13	.00	.0147						0700	.0038	.432						
6-14	5/ .04	5/ .0032						0705	7/ .0035	.432						
Watershed conditions: 95% - Contoured corn, 6-8 in. tall, approx. 8% canopy, rotary hoed 10 days prior to event; 5% - gullies and grassed waterways, grass approx. 12-18 in. tall.																
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 83.490. FOR TOPOGRAPHIC MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1964, P. 71.2-5. 4/ THIESSEN AVERAGE OF THREE RECORDING RAIN GAGES. 5/ RAINFALL FROM 0320 TO 0513. 6/ RUNOFF PRIOR TO 0518. 7/ BEGINNING OF NEXT EVENT.																

1967 SELECTED RUNOFF EVENTS			TREYNOR, IOWA				WATERSHED 2			
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)
Event of June 20 and 21, 1967										
	3 RG 1/			RG	115		6-20	2102	.0007	.000
5-21	.00	.0035	6-20	2056	.00	.00		2106	.0021	.000
5-22	.00	.0034		2101	.24	.02		2109	.0054	.000
5-23	.00	.0035		2110	2.40	.38		2114	.0187	.001
5-24	.00	.0032		2120	3.18	.91		2116	.117	.003
5-25	.00	.0024		2124	3.30	1.13		2119	.581	.021
5-26	.00	.0027		2132	6.45	1.99		2121	.989	.045
5-27	.00	.0029		2138	4.10	2.40		2123	1.42	.088
5-28	.53	.0059		2143	5.04	2.82		2124	1.51	.110
5-29	.24	.0057		2147	2.85	3.01		2125	1.46	.134
5-30	1.44	.0167		2151	2.40	3.17		2128	1.35	.204
5-31	.82	.0119		2200	2.73	3.58		2130	1.73	.257
6 -1	.08	.0068		2205	2.28	3.77		2131	2.30	.289
6 -2	.00	.0040		2209	2.70	3.95		2132	3.40	.333
6 -3	.00	.0038		2213	3.30	4.17		2133	4.36	.394
6 -4	1.28	.1862		2217	3.45	4.40		2134	4.87	.484
6 -5	2.43	1.4917		2222	.84	4.47		2135	4.69	.559
6 -6	.00	.0064		2238	1.99	5.00		2137	4.50	.702
6 -7	2.30	1.3569		2246	1.50	5.20		2138	4.31	.788
6 -8	.01	.0117		2251	2.64	5.42		2140	3.78	.914
6 -9	2.44	1.8313		2259	.45	5.48		2142	3.63	1.044
6-10	.18	.0222		2309	.54	5.57		2145	3.99	1.236
6-11	.98	.5915		2320	.16	5.60		2146	4.15	1.299
6-12	.03	.0374		2342	.08	5.63		2148	3.97	1.427
6-13	.00	.0147						2149	3.61	1.501
6-14	.87	.4999		RG	116	5.78		2150	3.09	1.553
6-15	.62	.2410		RG	118	6.20		2151	2.80	1.599
6-16	.20	.1233						2152	2.24	1.638
6-17	.00	.0129	3 RG	AVG 1/	5.82			2155	1.74	1.738
6-18	.00	.0108						2157	1.84	1.800
6-19	.00	.0093						2159	2.36	1.866
6-20	.00	2/ .0086						2201	2.49	1.952
								2202	2.66	1.992
								2203	2.33	2.031
								2205	2.09	2.108
								2206	1.85	2.139
								2210	1.95	2.265
								2213	2.24	2.370
								2215	2.70	2.457
								2216	2.94	2.501
								2218	2.87	2.592
								2224	1.33	2.809
								2226	1.08	2.846
								2229	1.16	2.903
								2231	1.35	2.947
								2233	1.53	2.993
								2235	1.46	3.046
								2237	1.37	3.090
								2242	1.40	3.208
								2243	1.36	3.230
								2245	1.39	3.278
								2246	1.30	3.299
								2249	1.16	3.361
								2251	1.37	3.401
								2252	1.30	3.422
								2253	1.42	3.448
								2254	1.26	3.469
								2255	1.33	3.489
								2256	1.48	3.511
								2258	1.01	3.556
								2300	.801	3.587
								2302	.622	3.609
								2305	.482	3.636
								2306	.394	3.643
								2308	.363	3.656

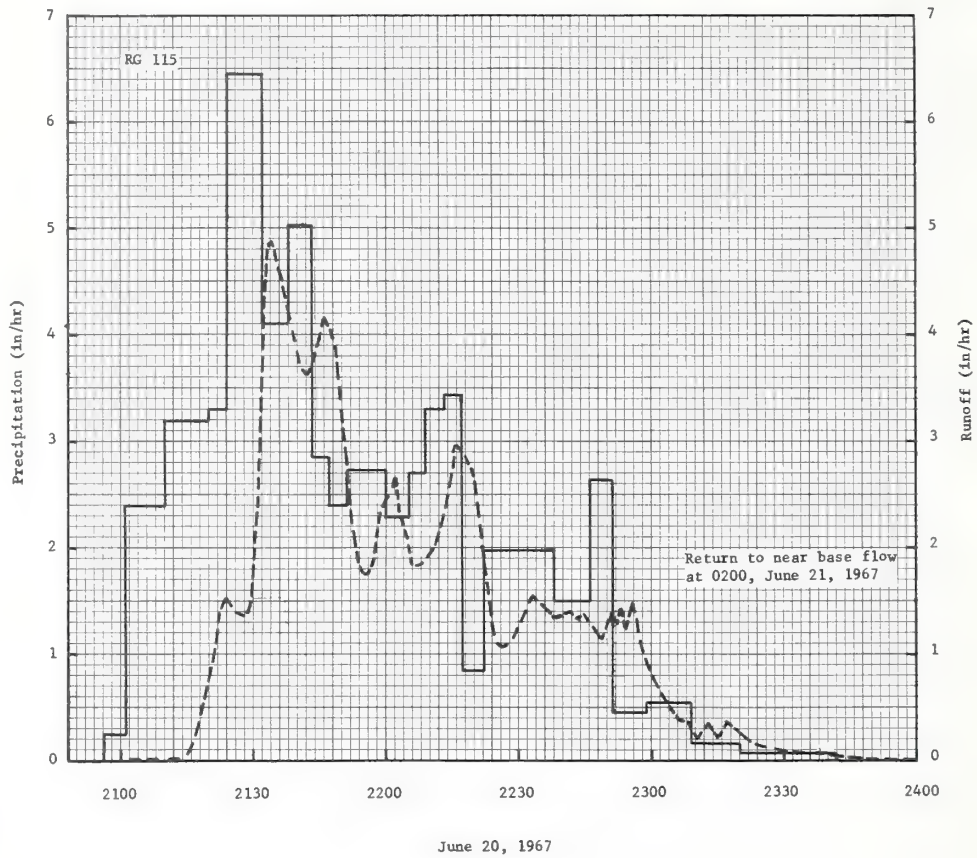
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 83.490. 1/ THIESSEN AVERAGE OF THREE RECORDING RAIN GAGES.
2/ RUNOFF PRIOR TO 2102.

1967 SELECTED RUNOFF EVENTS						TREYNOR, IOWA WATERSHED 2					
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)	
Event of June 20, 21-Continued											
								2310	.218	3.666	
								2313	.233	2.677	
								2315	.326	3.686	
								2317	.368	3.697	
								2319	.307	3.709	
								2323	.191	3.726	
								2330	.107	3.743	
								2338	.0594	3.753	
								2342	.0484	3.757	
								2343	.0442	3.757	
								2344	.0204	3.758	
								2345	.0151	3.758	
								2348	.0098	3.759	
							6-21	2400	.0088	3.761	
								0006	.0120	3.770	
								0008	.0240	3.771	
								0015	.0282	3.775	
								0028	.0132	3.779	
								0048	.0044	3.782	
								0200	<u>1/</u> .0033	3.786	

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 83,490. 1/ RETURN TO NEAR BASE FLOW.



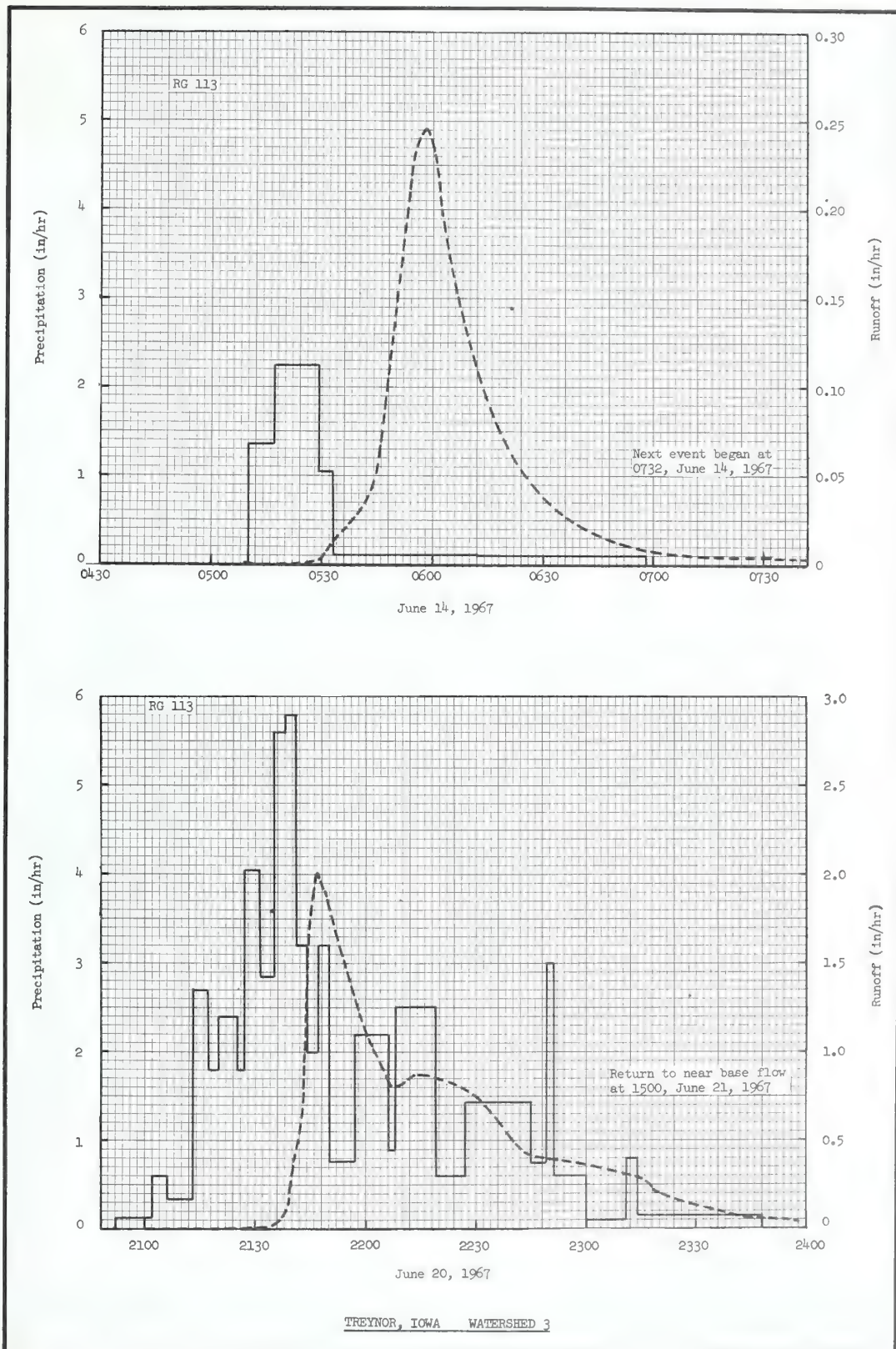
TREYNOR, IOWA WATERSHED 2



TREYNOR, IOWA WATERSHED 2

MONTHLY PRECIPITATION AND RUNOFF (inches)							TREYNOR, IOWA				WATERSHED 3					
							AREA—107 ACRES									
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	P 1/	.64	.09	1.12	2.64	3.26	15.61	2.08	1.88	3.72	2.55	.10	.54	34.23		
	Q	.16	.24	.18	.14	.11	3.05	.71	.50	.26	.23	.18	.19	5.95		
STA AV 2/P		.58	.61	1.18	3.15	4.34	9.80	3.12	2.85	5.36	1.18	.71	.64	33.52		
(64-67) Q		.20	.54	.64	.36	.32	1.23	.46	.28	.41	.31	.26	.21	5.22		
MEAN P 3/																
97 YR		.73	.91	1.41	2.60	3.72	4.69	3.72	3.43	3.12	2.01	1.17	.86	28.37		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	6-20	2.01	6-20	1.01	6-20	1.29	6-20	1.34	6-20	1.35	6-20	1.37	6-20	1.41	6-14	1.74
MAXIMUMS FOR PERIOD OF RECORD																
1964 TO 1967	6-20	2.01	6-20	1.01	6-20	1.29	6-20	1.34	6-20	1.35	6-20	1.37	2-27	1.54	6-14	1.74
	1967		1967		1967		1967		1967		1967		1965		1967	
Notes: Watershed conditions: 96% permanent pasture with controlled grazing; 4% gravel roads and farmstead. 1/ Precipitation: Arithmetic average of gages 113 and 114 before Apr. 4 and after Nov. 1; Thiessen average of gages 112, 113, and 114 for remainder of year. 2/ Precipitation records began Jan. 1, 1964. Runoff records began Jan. 2, 1964. Jan. 1, 1964 runoff estimated and included in average. 3/ Mean P based on 97-yr (1871-1967) U. S. Weather Bureau record period at Omaha, Nebr.																
1967 SELECTED RUNOFF EVENTS							TREYNOR, IOWA WATERSHED 3									
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
Event of June 14, 1967																
5-15	3 RG 4/	.0035	6-14	RG	113		6-14	0513	.0008	.0000						
5-16	.00	.0035		0510	.00	.00		0519	.0009	.0001						
5-17	.00	.0035		0517	1.37	.16		0523	.0012	.0002						
5-18	.00	.0033		0529	2.25	.61		0525	.0012	.0002						
				0533	1.05	.68		0527	.0015	.0002						
5-19	.00	.0030		0612	.11	.75		0528	.0017	.0003						
5-20	.00	.0031		0658	.10	.83		0530	.0045	.0004						
5-21	.00	.0029						0534	.0158	.0010						
5-22	.00	.0026		RG	112	.80		0539	.0269	.0028						
5-23	.00	.0026		RG	114	.85		0544	.0457	.0058						
5-24	.00	.0024		3 RG	AVG 4/	.83		0546	.0676	.0077						
5-25	.00	.0020						0550	.141	.0147						
5-26	.00	.0020						0553	.197	.0232						
5-27	.00	.0022						0555	.232	.0303						
5-28	.38	.0034						0558	.246	.0423						
5-29	.33	.0030						0600	.236	.0503						
5-30	1.42	.0070						0602	.203	.0576						
5-31	.74	.0054						0608	.139	.0747						
6-1	.16	.0048						0612	.110	.0830						
6-2	.00	.0032						0625	.0503	.1003						
6-3	.00	.0027						0640	.0217	.1093						
6-4	1.29	.0038						0708	.0064	.1158						
6-5	1.95	.2461						0725	.0045	.1174						
6-6	.00	.0070						0732	.0042	.1179						
6-7	1.78	.2292														
6-8	.01	.0121														
6-9	2.40	.2973														
6-10	.07	.0245														
6-11	.99	.0534														
6-12	.04	.0230														
6-13	.00	.0186														
6-14	6/ .02	.0040														
Watershed conditions: 96% - Pasture, good stand, moderately grazed, 60% 12-14 in. tall, 40% 4-6 in. tall; 4% - gravel roads and farmstead.																
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 107.89. FOR TOPOGRAPHIC MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1964, P. 71.3-4. 4/ THIENESSEN AVERAGE OF THREE RECORDING RAIN GAGES. 5/ BEGINNING OF NEXT EVENT. 6/ RAINFALL FROM 0320 TO 0510. 7/ RUNOFF PRIOR TO 0513.																

1967			SELECTED RUNOFF EVENTS				TREYNOR, IOWA				WATERSHED 3	
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF					
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)		
Event of June 20 and 21, 1967												
5-21	3 RG 1/ .00	.0029	6-20	RG	113	.00	6-20	2113	.0010	.0000		
5-22	.00	.0026		2052	.00	.00		2116	.0015	.0000		
5-23	.00	.0026		2102	.12	.02		2122	.0017	.0002		
5-24	.00	.0024		2106	.60	.06		2126	.0020	.0003		
				2113	.34	.10		2129	.0042	.0005		
5-25	.00	.0020		2117	2.70	.28		2131	.0107	.0007		
5-26	.00	.0020		2120	1.80	.37		2137	.0616	.0043		
5-27	.00	.0022		2125	2.40	.57		2139	.170	.0082		
5-28	.38	.0034		2127	1.80	.63		2140	.343	.0125		
5-29	.33	.0030		2131	4.05	.90		2142	.546	.0273		
5-30	1.42	.0070		2135	2.85	1.09		2143	.807	.0385		
5-31	.74	.0054		2138	5.60	1.37		2144	1.33	.0564		
6 -1	.16	.0048		2141	5.80	1.66		2145	1.78	.0824		
6 -2	.00	.0032		2144	3.20	1.82		2146	1.96	.1135		
6 -3	.00	.0027		2147	2.00	1.92		2147	2.01	.1466		
6 -4	1.29	.0038		2150	3.20	2.08		2148	1.92	.1793		
6 -5	1.95	.2461		2157	.77	2.17		2149	1.88	.2110		
6 -6	.00	.0070		2206	2.20	2.50		2152	1.66	.2995		
6 -7	1.78	.2292		2208	.90	2.53		2155	1.44	.3769		
6 -8	.01	.0121		2219	2.51	2.99		2158	1.23	.4436		
6 -9	2.40	.2973		2227	.60	3.07		2201	1.06	.5010		
6-10	.07	.0245		2245	1.43	3.50		2205	.899	.5662		
6-11	.99	.0534		2249	.75	3.55		2207	.807	.5946		
6-12	.04	.0230		2251	3.00	3.65		2210	.822	.6353		
6-13	.00	.0186		2300	.60	3.74		2213	.868	.6776		
6-14	.89	.1426		2311	.11	3.76		2216	.868	.7210		
6-15	.77	.0818		2314	.80	3.80		2222	.830	.8058		
6-16	.19	.0386		2348	.14	3.88		2227	.793	.8734		
6-17	.00	.0284						2230	.751	.9121		
6-18	.00	.0251						2235	.630	.9696		
6-19	.00	.0246		RG	112	3.78		2240	.490	1.0163		
6-20	.00	2/.0199		RG	114	4.15		2243	.434	1.0394		
				3 RG	AVG 1/	3.94		2250	.388	1.0873		
								2258	.374	1.1381		
								2315	.283	1.2311		
								2318	.222	1.2437		
								2330	.127	1.2787		
								2336	.0990	1.2900		
								2341	.0692	1.2970		
								2344	.0587	1.3002		
								2354	.0468	1.3090		
								2358	.0348	1.3117		
								2400	.0316	1.3128		
							6-21	0015	.0200	1.3193		
								0029	.0117	1.3230		
								0035	.0102	1.3240		
								0055	.0061	1.3268		
								0110	.0048	1.3281		
								0117	.0048	1.3287		
								0230	.0032	1.3335		
								0600	.0023	1.3431		
								1000	.0020	1.3518		
								1500	3/.0017	1.3609		
Watershed conditions: 96% - Pasture, good stand, moderately grazed, 6-18 in. tall; 4% - gravel roads and farmstead.												
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 107.89. 1/ THIESSEN AVERAGE OF THREE RECORDING RAIN GAGES. 2/ RUNOFF PRIOR TO 2113. 3/ RETURN TO NEAR BASE FLOW.												

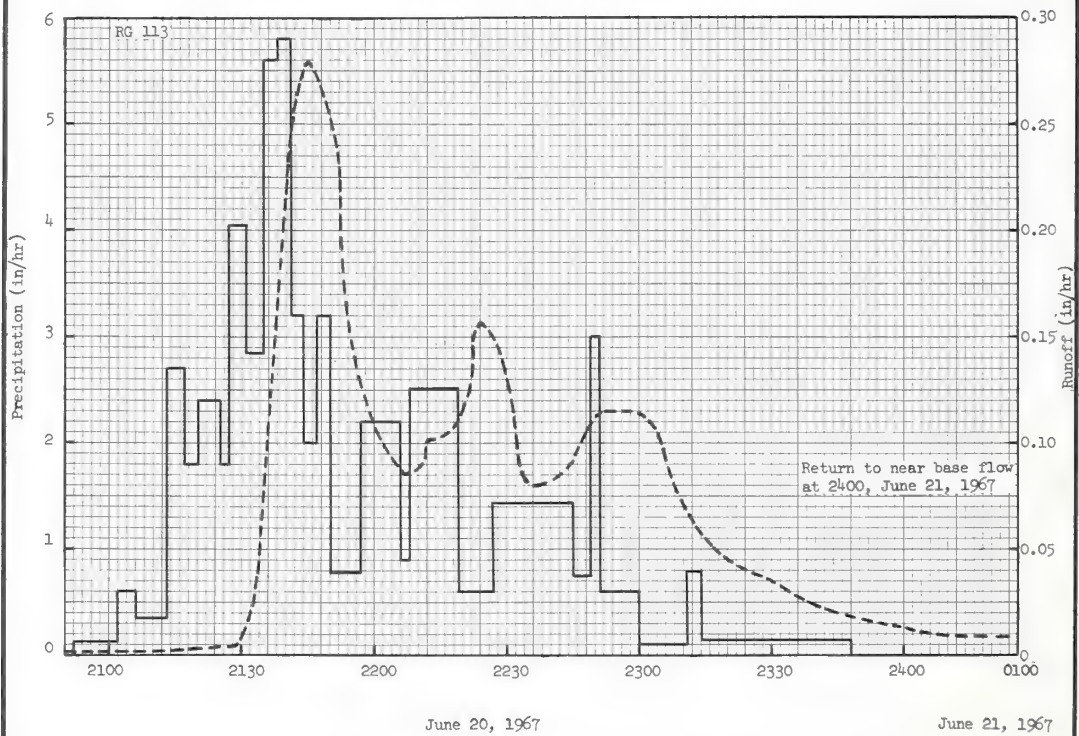
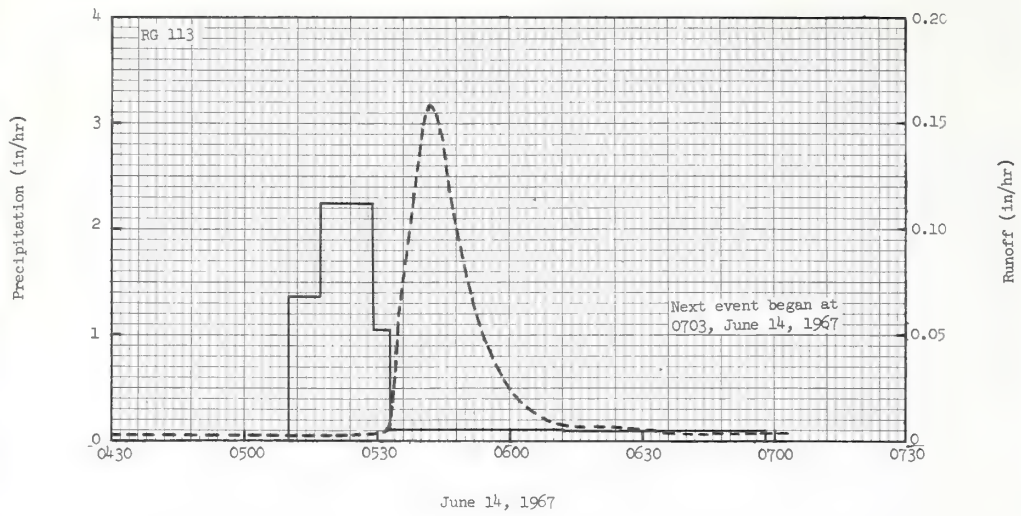


MONTHLY PRECIPITATION AND RUNOFF (inches)						TREYNOR, IOWA AREA—150 ACRES WATERSHED 4											
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL				
1967 P 1/ Q	.70 .29	.08 .28	1.04 .27	2.59 .28	3.24 .26	15.70 2.61	2.13 1.34	1.93 .71	3.88 .55	2.61 .52	.10 .47	.55 .43	34.55 8.01				
STA AV 2/P (64-67) Q	.58 .41	.61 .44	1.16 .75	3.12 .48	4.28 .55	9.89 1.47	3.16 1.13	2.78 .67	5.91 .76	1.21 .70	.71 .56	.62 .48	34.03 8.40				
MEAN P 3/ 97 YR	.73	.91	1.41	2.60	3.72	4.69	3.72	3.43	3.12	2.01	1.17	.86	28.37				
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																	
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL														
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS		
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	
1967	6-20	.28	6-20	.15	6-20	.23	6-20	.26	6-20	.29	6-20	.36	6-20	.48	6-20	1.07	
MAXIMUMS FOR PERIOD OF RECORD																	
1964 1967	6-25 1966	.30	6-22 1964	.17	6-20 1967	.23	2-28 1965	.35	2-28 1965	.50	2-28 1965	.65	2-28 1965	.76	6-20 1967	1.07	
Notes: Watershed conditions: 82% contour corn above level terraces which have a capacity of 2 in. of runoff; 7% contour corn below the bottom terraces; 10% grassed terrace back-slopes; 1% gully. 1/ Precipitation from gage 113 before Apr. 4 and after Nov. 1; Thiessen average of gages 111, 112, and 113 for remainder of year. 2/ Precipitation records began Jan. 1, 1964. Runoff records began Feb. 27, 1964. Jan. 1-Feb. 27, 1964 runoff estimated and included in average. 3/ Mean P based on 97-yr. (1871-1967) U.S. Weather Bureau record period at Omaha, Nebr.																	
1967 SELECTED RUNOFF EVENTS						TREYNOR, IOWA WATERSHED 4											
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF										
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)							
Event of June 14, 1967																	
5-15	3 RG 4/ .00	.0079	6-14	RG	113	.00	6-14	0511	.0026	.0000							
5-16	.00	.0084		0510	.00	.16		0521	.0028	.0005							
5-17	.00	.0083		0517	1.37	.16		0532	.0054	.0012							
5-18	.00	.0076		0529	2.25	.61		0533	.0095	.0013							
				0533	1.05	.68		0535	.0579	.0025							
5-19	.00	.0070		0612	.11	.75		0540	.140	.0107							
5-20	.00	.0081		0658	.10	.83		0542	.159	.0157							
5-21	.00	.0081						0545	.140	.0232							
5-22	.00	.0073		RG	111	.81		0546	.125	.0254							
5-23	.00	.0069		RG	112	.80		0554	.0489	.0370							
5-24	.00	.0069		3 RG	AVG 4/ .81			0600	.0235	.0407							
5-25	.00	.0070						0604	.0155	.0420							
5-26	.00	.0070						0606	.0132	.0424							
5-27	.00	.0075						0608	.0103	.0428							
5-28	.40	.0090						0621	.0066	.0447							
5-29	.29	.0088						0632	.0043	.0457							
5-30	1.45	.0124						0635	.0036	.0459							
5-31	.73	.0112						0645	.0034	.0464							
6-1	.17	.0105						0658	.0036	.0472							
6-2	.00	.0094						0703	5/ .0034	.0475							
6-3	.00	.0087															
6-4	1.28	.0105															
6-5	1.96	.1250															
6-6	.00	.0141															
6-7	1.89	.1054															
6-8	.01	.0261															
6-9	2.49	.1495															
6-10	.06	.0671															
6-11	1.02	.0990															
6-12	.05	.0799															
6-13	.00	.0767															
6-14	6/ .02	7/.0145															
Watershed conditions:																	
82% - Contour corn above level terraces;																	
7% - contour corn below terraces, all corn 6-8 in. tall, approx. 8% canopy;																	
10% - grassed terrace backslopes, grass 14-20 in. tall, terraces wet prior to event;																	
1% - gully.																	
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 151.25. FOR REVISED TOPOGRAPHIC MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1966, P. 71.4-3. 4/ THIESSEN AVERAGE OF THREE RECORDING RAIN GAGES. 5/ BEGINNING OF NEXT EVENT. 6/ RAINFALL FROM 0320 TO 0510. 7/ RUNOFF PRIOR TO 0511.																	

Cooperative Research Project of USDA and Iowa Agriculture and Home Economics Experiment Station

1967 SELECTED RUNOFF EVENTS			TREYNOR, IOWA WATERSHED 4							
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)
Event of June 20 and 21, 1967										
5-21	3 RG 1/ .00	.0081	6-20	RG	113		6-20	2101	.0024	.0000
5-22	.00	.0073		2052	.00	.00		2116	.0030	.0007
5-23	.00	.0069		2102	.12	.02		2129	.0054	.0016
5-24	.00	.0069		2106	.60	.06		2133	.0280	.0027
				2113	.34	.10		2135	.0790	.0045
5-25	.00	.0070		2117	2.70	.28		2137	.140	.0082
5-26	.00	.0070		2120	1.80	.37		2140	.217	.0171
5-27	.00	.0075		2125	2.40	.57		2143	.266	.0292
5-28	.40	.0090		2127	1.80	.63		2145	.279	.0383
5-29	.29	.0088		2131	4.05	.90		2148	.266	.0519
5-30	1.45	.0124		2135	2.85	1.09		2152	.222	.0681
5-31	.73	.0112		2138	5.60	1.37		2201	.104	.0926
6-1	.17	.0105		2141	5.80	1.66		2207	.0854	.1021
6-2	.00	.0094		2144	3.20	1.82		2211	.0887	.1079
6-3	.00	.0087		2147	2.00	1.92		2212	.102	.1095
6-4	1.28	.0105		2150	3.20	2.08		2217	.104	.1181
6-5	1.96	.1250		2157	.77	2.17		2220	.116	.1236
6-6	.00	.0141		2206	2.20	2.50		2222	.145	.1279
6-7	1.89	.1054		2208	.90	2.53		2224	.157	.1330
6-8	.01	.0261		2219	2.51	2.99		2228	.145	.1430
6-9	2.49	.1495		2227	.60	3.07		2233	.0870	.1527
6-10	.06	.0671		2245	1.43	3.50		2235	.0806	.1555
6-11	1.02	.0990		2249	.75	3.55		2241	.0838	.1637
6-12	.05	.0799		2251	3.00	3.65		2245	.0921	.1696
6-13	.00	.0767		2300	.60	3.74		2249	.110	.1763
6-14	.94	.1238		2311	.11	3.76		2251	.114	.1800
6-15	.79	.1026		2314	.80	3.80		2255	.116	.1876
6-16	.22	.0869		2348	.14	3.88		2259	.116	.1953
6-17	.00	.0817						2304	.104	.2045
6-18	.00	.0754						2308	.0806	.2107
6-19	.00	.0684		RG	111	3.54		2312	.0632	.2154
6-20	.00	2/.0550		RG	112	3.78		2319	.0466	.2218
				3 RG	AVG 1/	3.71		2328	.0370	.2281
								2335	.0280	.2319
								2400	.0132	.2405
							6-21	0008	.0095	.2420
								0019	.0076	.2436
								0041	.0060	.2461
								2400	3/.0051	.3753
Watershed conditions: 82% - Contour corn above level terraces; 7% - contour corn below terraces corn 6-10 in. tall, approx. 10% canopy, 10% cultivated prior to event; 10% - grassed terrace backslopes, grass 18-24 in. tall, some terraces ponded prior to event; 1% - gully.										

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 151.25. 1/ THIESSEN AVERAGE OF THREE RECORDING RAIN GAGES.
 2/ RUNOFF PRIOR TO 2101. 3/ RETURN TO NEAR BASE FLOW.



TREYNOR, IOWA WATERSHED 4

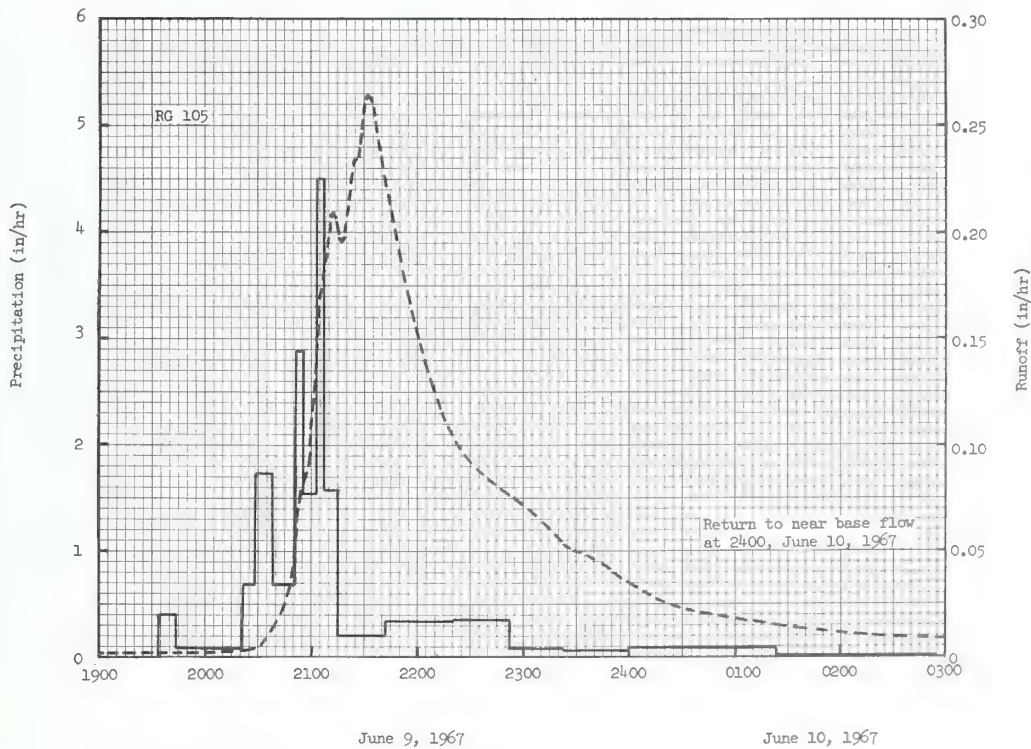
MONTHLY PRECIPITATION AND RUNOFF (inches)						TREYNOR, IOWA						WATERSHED 5				
						AREA—389 ACRES										
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967 P 1/ Q	.68 .10	.16 .17	1.18 .13	2.60 .13	2.69 .11	17.25 4.59	2.29 1.26	1.86 .65	2.85 .42	2.06 .32	.10 .25	.62 .22	34.34 2.35			
STA AV 2/P (63-67) Q	.54 .24	.59 .38	1.51 .72	3.04 .35	3.45 .33	8.20 1.53	3.21 .64	3.74 .39	5.14 .61	1.01 .36	1.00 .33	.78 .30	32.21 6.18			
MEAN P 3/ 97 YR	.73	.91	1.41	2.60	3.72	4.69	3.72	3.43	3.12	2.01	1.17	.86	28.37			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	6-20	1.30	6-20	.93	6-20	1.32	6-20	1.59	6-20	1.63	6-20	1.69	6-20	1.80	6-20	2.52
MAXIMUMS FOR PERIOD OF RECORD																
1963 TO 1967	6-20 1967	1.30	6-20 1967	.93	6-20 1967	1.32	6-20 1967	1.59	6-20 1967	1.63	6-20 1967	1.69	6-20 1967	1.80	6-20 1967	2.52
NOTES: Watershed conditions: Percent crop distribution of area above or below level terraces, respectively 1s; corn, 32 and 3; beans, 25 and 6; small grain, 3 and 0; hay and clover, 19 and 1; pasture, 3 and 4, and roads and farmsteads, 3 and 1. 1/ Precipitation: Before Apr. 4 and after Nov. 1, arithmetic average of gages 101 and 106; Thiessen average of seven recording gages for remainder of year. 2/ Precipitation and runoff records began Feb. 6, 1963. Jan. 1-Feb. 6, 1963 precipitation and runoff estimated and included in average. 3/ Mean P based on 97-yr (1871-1967) U. S. Weather Bureau record period at Omaha, Nebr.																
1967 SELECTED RUNOFF EVENTS						TREYNOR, IOWA WATERSHED 5										
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
Event of June 9 and 10, 1967																
5-10	7 RG 4/ .00	.0032	6-9	RG 1934	105 .00	.00	6-9	1935	.0019	.0000						
5-11	.00	.0031		1943	.40	.06		1957	.0022	.0008						
5-12	.00	.0032		2022	.08	.11		2026	.0031	.0021						
5-13	.00	.0031		2029	.69	.19		2032	.0060	.0025						
				2029				2039	.0155	.0038						
5-14	.02	.0031		2038	1.73	.45		2048	.0343	.0075						
5-15	.00	.0032		2051	.69	.60		2051	.0558	.0098						
5-16	.05	.0032		2056	2.88	.84		2055	.0795	.0143						
5-17	.00	.0029		2103	1.54	1.02		2059	.0923	.0200						
5-18	.00	.0027		2107	4.50	1.32		2101	.119	.0235						
5-19	.00	.0023		2115	1.57	1.53		2105	.170	.0332						
5-20	.00	.0023		2142	.20	1.62		2108	.190	.0422						
5-21	.00	.0023		2221	.34	1.84		2112	.209	.0555						
5-22	.00	.0026		2252	.35	2.02		2114	.201	.0623						
5-23	.00	.0024		2323	.08	2.06		2117	.196	.0722						
5-24	.00	.0018	6-10	2400	.06	2.10		2121	.212	.0858						
5-25	.00	.0015		0033	.09	2.15		2123	.229	.0932						
5-26	.00	.0015		0124	.09	2.23		2125	.235	.1009						
5-27	.03	.0015		0204	.01	2.24		2127	.235	.1088						
5-28	.08	.0022		0254	.01	2.25		2130	.257	.1211						
5-29	.36	.0034		RG	101	2.33		2132	.264	.1297						
5-30	.97	.0127		RG	102	2.29		2134	.260	.1385						
5-31	.68	.0116		RG	103	2.16		2136	.251	.1470						
6-1	.03	.0046		RG	104	2.15		2145	.209	.1815						
6-2	.00	.0030		RG	106	2.13		2150	.187	.1920						
6-3	.00	.0025		RG	107	2.15		2157	.160	.2183						
6-4	.44	.0028						2212	.119	.2532						
6-5	2.87	.1746		7 RG	AVG 4/	2.19		2223	.101	.2734						
6-6	.00	.0150						2226	.0956	.2783						
6-7	2.17	.1687						2248	.0780	.3101						
6-8	.00	.0399						2321	.0558	.3469						
6-9	5/ .96	5/ .1124						2324	.0523	.3496						
								2334	.0489	.3550						
								2400	.0335	.3759						
								0020	.0259	.3858						
								0057	.0177	.3993						
								0222	.0104	.4192						
								0223	.0100	.4194						
								0251	.0084	.4236						
								0426	.0055	.4347						
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 392.24. FOR REVISED TOPOGRAPHIC MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1966, P. 71.5-3. 4/ THIESSEN AVERAGE OF SEVEN RECORDING RAIN GAGES. 5/ RAINFALL FROM 0123 TO 0700. 6/ RUNOFF PRIOR TO 1935.																

Cooperative Research Project of USDA and Iowa Agricultural and Home Economics Experiment Station

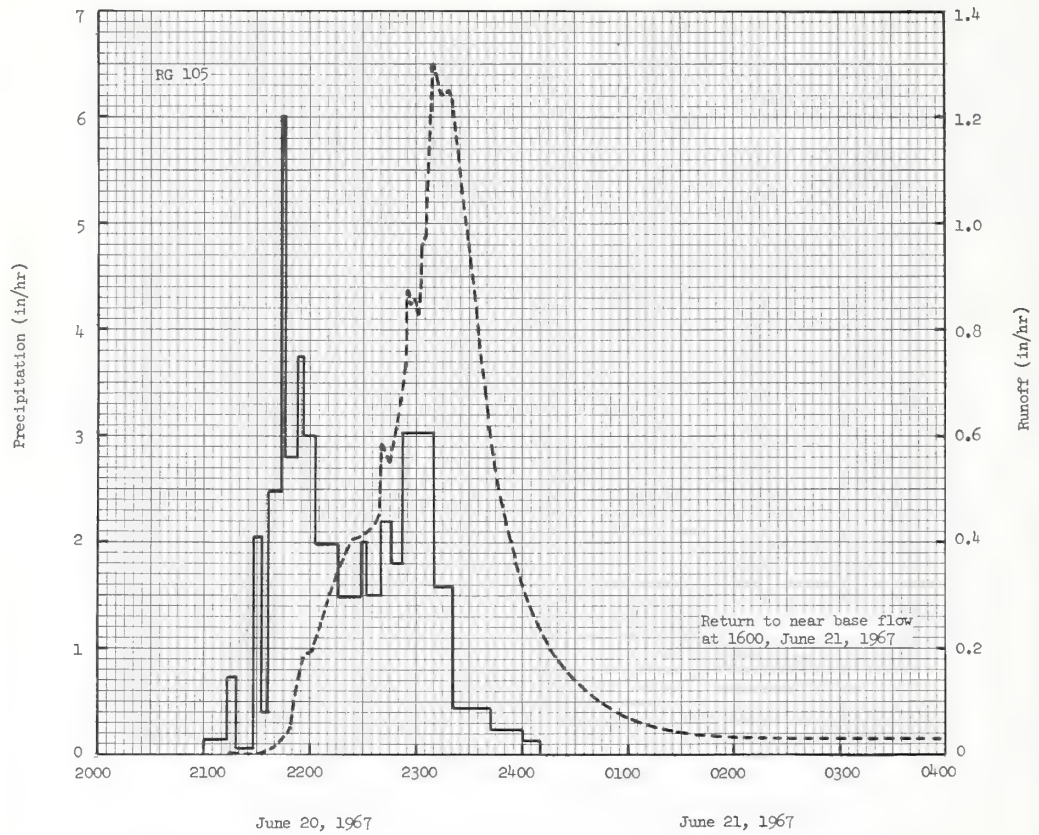
[illegible]

1967 SELECTED RUNOFF EVENTS				TREYNOR, IOWA WATERSHED 5							
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)	
Watershed conditions:			Event of June 20-21, 1967-Continued								
Percent of watershed in:											
Above terraces											
Below terraces											
Corn	32	3						0123	.0454	1.5332	
Beans	25	6						0153	.0326	1.5527	
Small grain	3	-						0213	.0318	1.5634	
Alfalfa and clover	19	1						0227	.0259	1.5701	
Pasture	3	4						0249	.0183	1.5783	
Roads and farmsteads	3	1						0321	.0149	1.5871	
Totals	85	15						0331	.0132	1.5894	
Crop heights: Corn, 6-10 in.; beans, 3-6 in.; small grain 16-24 in.; alfalfa and clover variable, and pasture, 6-18 in.								0500	.0088	1.6058	
Some terrace overtopping during previous events and ponding prior to this event.								0643	.0066	1.6190	
								0753	.0063	1.6265	
								0959	.0060	1.6395	
								1259	.0055	1.6567	
								1600	.0047	1.6721	

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 392.24. 1/ RETURN TO NEAR BASE FLOW.



TREYNOR, IOWA WATERSHED 5



TREYNOR, IOWA WATERSHED 5

MONTHLY PRECIPITATION AND RUNOFF (inches)						COTTONWOOD, SOUTH DAKOTA										WATERSHED H-2		72.01	
						AREA—2.13 ACRES													
MONTH YEAR		JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL					
1967	P ^{1/} Q	.32 .55	.34 .00	.47 .00	3.62 .00	2.15 .03	6.35 1.45	.25 .00	.65 .00	1.65 .00	.28 .00	.17 .00	.51 .00	16.76 2.03					
STA AVG (63-67) ^{2/}		.26	.19	.77	2.06	3.10	3.91	1.12	1.24	1.41	.46	.18	.39	15.09					
MEAN P ^{3/}		.11	.00	.14	.01	.27	.48	.02	.02	.02	.00	.00	.00	1.07					
58 YR		.43	.38	.75	1.76	2.79	3.00	1.82	1.56	1.13	.89	.40	.35	15.26					
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																			
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL																
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS				
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	
1967	6-15	.36	6-15	.22	6-15	.29	6-15	.74	6-15	1.12	6-15	1.13	6-15	1.13	6-11	1.37			
MAXIMUMS FOR PERIOD OF RECORD																			
19 63 TO	5-30	3.58	5-30	.61	5-30	.63	5-30	1.13	5-30	1.13	5-30	1.13	5-30	1.13	6-11	1.37			
19 67	1963		1963		1963		1963		1963		1963		1963		1967				
NOTES: Watershed conditions: 100% heavily grazed rangeland. Vegetative cover in late July was 439.8 lb./acre (oven-dry weight.) 1/ Arithmetic mean of rain gages RH-1, RH-2, RH-3 and RH-4. 2/ Precipitation and runoff records began Jan. 1963. 3/ Mean P based on 58-yr. (1910-1967) U. S. Weather Bureau record period at Cottonwood, S. D.																			
NO SUITABLE SELECTED RUNOFF TO REPORT. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1965, USDA MISC. PUB. 1216, P. 72.1-5.																			

MONTHLY PRECIPITATION AND RUNOFF (inches)						COTTONWOOD, SOUTH DAKOTA WATERSHED L-2 AREA—2.38 ACRES								72.02		
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967 P ₁ / _G	.28 .00	.30 .00	.38 .01	3.43 .00	2.20 .00	6.05 .64	.26 .00	.76 .00	1.59 .00	.32 .00	.17 .00	.51 .00	16.25 0.65			
STA AVG P ₂ / _G (63-67)	.25 .00	.20 .00	.72 .34	2.02 .00	3.09 .05	3.95 .39	1.05 .00	1.24 .00	1.44 .00	.45 .00	.17 .00	.31 .00	14.89 0.78			
MEAN P ₃ / _G 58 YR	.43	.38	.75	1.76	2.79	3.00	1.82	1.56	1.13	.89	.40	.35	15.26			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	6-15	.22	6-15	.15	6-15	.19	6-15	.49	6-15	.64	6-15	.64	6-15	.64	6-15	.64
MAXIMUMS FOR PERIOD OF RECORD																
1963 TO 1967	6-15 1963	.54	6-15 1963	.38	6-15 1963	.54	6-15 1963	1.07	6-15 1963	1.16	6-15 1963	1.24	6-15 1963	1.24	3-8 1966	1.54
NOTES: Watershed conditions: 100% lightly grazed rangeland. Vegetative cover in late July was 736.7 lb./acre (oven-dry weight.) 1/ Arithmetic mean of rain gages RL-1, RL-2, RL-3 and RL-4. 2/ Precipitation and runoff began Jan. 1963. 3/ Mean P based on 58 yr. (1910-1967) U. S. Weather Bureau record period at Cottonwood, S. D.																
NO SUITABLE SELECTED RUNOFF TO REPORT. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1965, USDA MISC. PUB. 1216, P. 72.2-4.																

MONTHLY PRECIPITATION AND RUNOFF (inches)						COTTONWOOD, SOUTH DAKOTA WATERSHED M-1 AREA—2.35 ACRES																		
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL											
1967	P1/ Q	.32 .00	.33 .00	.47 .00	3.65 .00	2.19 .00	6.41 .77	.25 .00	.69 .00	1.58 .00	.33 .00	.18 .00	.57 .00	16.97 0.77										
STA AVG (63-67)	P2/ Q	.25 .00	.19 .00	.75 .38	2.02 .00	3.10 .26	3.99 .34	1.09 .00	1.25 T	1.39 .00	.47 .00	.20 .00	.38 .00	15.08 0.98										
58 YR. P3/ Q	.43	.38	.76	1.72	2.80	2.88	1.84	1.58	1.12	.90	.41	.35	15.17											
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																								
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL																					
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS									
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME								
1967	6-15	.25	6-15	.16	6-15	.19	6-15	.50	6-15	.72	6-15	.72	6-15	.72	6-11	.76								
MAXIMUMS FOR PERIOD OF RECORD																								
19 63 TO 19 67	5-30 1963	2.30	5-30 1963	.71	5-30 1963	.76	5-30 1963	1.12E	5-30 1963	1.12E	5-30 1963	1.12E	3-8 1966	1.54	3-8 1966	1.91								
NOTES: Watershed conditions: 100% moderately grazed rangeland. Vegetative cover in late July was 393.4 lb./acre (oven-dry weight.) 1/ Arithmetic mean of rain gages RM-1, RM-2, RM-3 and RM-4. 2/ Precipitation and runoff began Jan. 1963. 3/ Mean P based on 58-yr. (1910-1967) U. S. Weather Bureau record period at Cottonwood, S. D.																								
1967 DAILY AIR TEMPERATURE (degrees F)						COTTONWOOD, SOUTH DAKOTA WATERSHED M-1																		
DAY	JAN		FEB		MAR		APR		MAY		JUNE		JULY		AUG		SEPT		OCT		NOV		DEC	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	38	6	30	14	64	31	43	17	39E	23E	57	44	87	58	93	61	77	51	92	60	61	32	54	31
2	31	22	46	8	54	23	50	23	36	22	68	49	72	46	90	56	85	49	75	53	40	29	44	8
3	33	9	52	26	33	20	73	20	39	23	84	52	72	43	87	50	87	51	93	48	32	20	58	24
4	36	20	50	32	35	25	72	45	43	28	80	50	74	46	90	49	84	45	79	47	30	20	58	21
5	31	6	49	6	31	10	65	40	53	23	74	53	83	49	93	59	85	53	79	46	44	8	59	13
6	31	9	37	10	35	7	56	30	63	35	75	58	87	59	89	57	86	53	67	45	45	12	47	24
7	9	-2	35	22	31	-3	72	21	63	47	72	58	89	65	93	59	89	57	57	40	57	8	39	10
8	30	-9	44	2	39	3	74	32	63	41	72	54	86	53	93	63	88	52	72	22	62	16	31	12
9	35	17	44	40	54	30	62	35	81	39	70	49	89	61	80	44	87	53	70	41	70	25	32	22
10	28	7	40	28	49	30	66	28	78	49	69	48	87	60	82	53	88	60	57	18	62	32	43	26
11	43	8	35	13	31	23	67	49	53	30	68	54	85	57	89	52	94	58	77	23	63	31	48	24
12	40	19	51	14	28	25	65	43	47	35	74	55	85	52	95	60	94	55	77	40	55	26	35	21
13	40	20	60	33	27	11	59	45	49	38	78	52	84	46	96	61	66	44	65	34	53	28	24	0
14	37	18	50	11	22	15	67	44	56	34	78	57	87	49	95	54	62	47	65	38	54	25	22	-5
15	35	6	14	-4	36	-7E	68	41	62	31	66	56	90	63	98	52	63	47	60	31	67	18	30	-3
16	43	8	15	-13	35	15	65	37	66	44	73	50	90	56	97	58	69	44	75	23	61	26	41	13
17	10	-4	6	-7	30	14	57	27	83	38	77	48	91	56	94	52	65	46	70	27	56	23	34	23
18	27	-4	15	-19	43	20	71E	31	82	47	85	55	86	59	92	54	62	54	63	19	50	11	30	2
19	43	2	23	-6	41	31	71	42E	68	37	74	56	87	65	83	42	62	50	70	26	39	16	19	-10
20	46	31	24	-1	49	33	67	40	72	36	76	55	93	59	93	49	75	39	64	22	51	11	11	7
21	52	21	44	15	61	24	46	28	77	40	76	50	100	57	95	55	78	39	84	40	42	23	9	2
22	60	40	30	8	65	34	44	20	90	45	77	52	100	58	90	49	93	50	75	41	49	4	14	-20
23	40	19	30	2	74	34	45	23	87	53	58	49	93	56	95	48	90	50	67	38	46	30	52	6
24	25	11	29	0	70	41	57	38	88	55	66	43	93	61	104	62	84	36	56	27	55	15	42	30
25	23	12	48	13	58	36E	47	35	88	51	77	41	99	63	102	64	89	47	52	15	46	27	45	4
26	36	12	52	26	64	35	54	38	79	51	78	46	91	57	78	41	78	48	54	33	37	13	27	-1
27	42	10	49	33	60	35	68	31	66	42	81	54	82	55	97	47	64	22	47	19	35	12	24	-9
28	47	20	65	29	77	41	80	43	63	45	82	60	93	52	100	62	80	30	64	25	25	-5	26	10
29	51	25	---	---	81	49	76	42	60	50	85	59	100	54	92	57	88	38	55	35	37	1	34	10
30	47	32	---	---	75	39	38E	24E	51	46	89	56	99	67	82	48	95	39	58	20	58	7	28	-3
31	44	27	---	---	56	30	---	---	48	45	---	---	98	58	76	42	---	---	69	25	---	---	3	-31
AV.	37	14	38	12	49	24	62	34	64	40	75	52	89	56	91	54	80	47	68	33	49	18	34	8
MEAN	25.0		25.0		36.5		47.6		51.9		63.4		72.5		72.5		63.6		50.5		33.8		21.4	
STA AV	33	6	36	9	46	19	61	32	71	42	81	53	91	59	89	55	79	46	66	33	49	20	37	10
NOTES: TEMPERATURE DATA FROM U. S. WEATHER BUREAU METEOROLOGICAL STATION AT COTTONWOOD, S. D. FOR 24 HOURS ENDING 1700.																								

1967 DAILY PRECIPITATION (inches)						COTTONWOOD, SOUTH DAKOTA WATERSHED M-1						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.00	.05	.00	.00	.12S	.02	.03	.00	.00	.00	.00	.00
2	T	.00	.00	.00	T	.00	.00	.39	.00	.00	.18	.00
3	T	.01	.16	.00	.00	.09	.00	.00	.00	.00	.00	.00
4	.00	.02	.09	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.01	.00	.00	.00	.00	.00	.08	.00	.00	.00	.00
6	.14	.02	.03	.00	.00	.04	.00	.00	.00	.17	.00	.00
7	.08	.10	T	.00	.00	.00	.00	.02	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.04	.00	.00	.00	.17
9	.00	.00	.00	.00	.00	.61	.00	.00	.35	.00	.00	.00
10	.00	.00	.00	.00	.05	.00	.00	.00	.00	.00	.00	.00
11	.00	.04	T	.00	.02	1.55	.00	.00	.02	.00	.00	.01
12	.00	.00	.00	.87	.12	.07	.00	.00	.03	.00	.00	.00
13	.00	.00	.00	.28	.00	.23	.00	.00	.07	.00	.00	.00
14	T	.04	.13	.02	.00	.04	.00	.00	.26	.00	.00	.00
15	.00	.04	.01	.00	.08	2.38	.00	.09	.33	.00	.00	.00
16	.03	.00	.00	T	.02	.00	.00	.00	.13	.00	.00	.00
17	.02	T	.00	.02	.00	.00	.00	.00	.04	.00	.00	.17
18	.00	.00	.00	.00	.00	.05	.00	.04	.02	.00	.00	.00
19	.00	.00	.05	.41	.00	.00	.00	.00	.33	.00	.00	.00
20	.00	.00	.00	.07	.00	.00	.00	.00	.00	.00	.00	.09
21	.00	T	.00	T	.00	.00	.00	.00	.00	.00	.00	.02
22	.00	.00	.00	.00	.00	.00	T	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.55	.00	.00	.00	.00	.00	.00
24	T	.00	.00	.36	.02	.04	.00	.00	.00	.00	.00	.00
25	.01	.00	.00	.00	.22	.59	.03	.00	.00	.10S	.00	.00
26	.00	.00	.00	.00	.25	.09	.14	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.03	.00	.00	.00	.06	.00	.04
29	.00	-----	.00	.02	.15	.00	.00	.00	.00	.00	.00	.02
30	.04	-----	.00	1.60N	.96	.03	.00	.03	.00	.00	.00	.05
31	.00	-----	.00	-----	.18	-----	.05	.00	-----	.00	-----	.00
TOTAL	.32	.33	.47	3.65	2.19	6.41	.25	.69	1.58	.33	.18	.57
ST. A.V.	.25	.19	.75	2.02	3.10	3.99	1.09	1.25	1.39	.47	.20	.38
NOTES PRECIPITATION FROM JAN. 1 THROUGH MARCH 31 AND NOV. 1 THROUGH DEC. 31 IS SNOW, ALL THE REST IS RAIN EXCEPT AS INDICATED. PRECIPITATION IS ARITHMETIC MEAN OF GAGES RM-1, RM-2, RM-3 AND RM-4.												
NO SUITABLE SELECTED RUNOFF TO REPORT. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1965, USDA MISC. PUB. 1216, P. 72.5-7.												

1/ MONTHLY PRECIPITATION AND RUNOFF (inches)						2/ AHOSKIE, NORTH CAROLINA WATERSHED W-A1 AREA—36,480 ACRES (57.0 SQ. MILES)						75.1		
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1967	P	4.45	3.47	.81	1.50	2.41	5.40	4.67	8.10	2.76	1.41	1.52	4.96	41.37
	Q	2.89	1.96	.60	.27	.17	.93	.93	3.05	.64	.17	.16	1.74	13.51
STA AV (65-67)	3/	3.49	3.75	2.28	1.50	3.49	4.75	4.66	6.02	2.72	1.01	1.17	2.83	37.67
	6/	1.58	2.54	2.26	.47	.63	.92	1.07	1.50	.34	.15	.13	.70	12.29
MEAN P4/58 YR		3.55	3.69	3.65	3.26	3.53	4.86	5.71	4.70	3.98	2.83	2.75	3.36	45.87

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	1-8	.04	1-8	.04	1-8	.08	1-8	.25	1-8	.49	1-8	.97	1-8	1.48	8-21	2.65

MAXIMUMS FOR PERIOD OF RECORD																
1950 TO 1967	10-5 1964	.07	10-5 1964	.07	10-5 1964	.14	10-5 1964	.42	10-5 1964	.83	10-5 1964	1.65	10-5 1964	3.02	10-3 1964	4.15

Notes: Watershed conditions: Woodland, 65%; row crops, 30%; pasture, 2%; roads, urban, and homesites, 3%. 1/ Precipitation Thiessen weighted using 10 gages. 2/ Runoff data furnished by U.S. Geological Survey. 3/ STA AV Computed from rainfall and runoff records for period 1965-1967. 4/ Mean P based on 58-yr (1910-1967) U.S. Weather Bureau record period at Scotland Neck, N.C. Missing records for Oct. 1920, May 1945, Jan. and May 1949, Jan., Feb., and Mar. 1950, and Nov. 1951 estimated from nearby station.

1967 DAILY AIR TEMPERATURE (degrees F)												AHOSKIE, NORTH CAROLINA WATERSHED W-A1												75.1	
DAY	JAN		FEB		MAR		APR		MAY		JUNE		JULY		AUG		SEPT		OCT		NOV		DEC		
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	
1	47	36	72	41	51	28	78	35	83	57	63	46	86	63	88	67	81	61	77	40	72	38	43	31	
2	52	33	70	51	59	17	88	52	83	60	66	48	86	64	90	64	76	50	76	46	69	55	53	20	
3	52	38	67	35	73	43	90	59	83	53	78	46	85	67	91	70	76	44	80	44	67	48	63	42	
4	50	43	52	28	72	39	85	44	69	40	79	55	86	65	91	73	75	47	84	54	66	48	55	32	
5	45	30	55	30	80	39	81	34	72	47	79	57	86	53	89	69	85	51	86	51	61	28	62	25	
6	46	21	63	32	82	74	88	66	73	48	81	57	83	53	85	67	83	53	84	56	47	27	57	26	
7	66	28	59	24	78	56	87	66	78	70	82	53	82	63	86	65	84	52	75	57	47	19	66	31	
8	64	55	40	18	57	35	87	40	78	46	85	50	87	69	85	64	84	54	72	58	50	18	68	46	
9	60	43	37	24	66	29	67	30	68	50	86	52	89	71	89	63	83	60	79	63	62	21	65	40	
10	46	39	39	17	73	41	85	55	71	41	89	54	87	70	85	72	75	63	77	62	69	28	56	49	
11	44	29	55	31	76	58	77	55	83	55	88	54	88	73	82	64	74	57	75	47	68	31	63	44	
12	45	19	53	38	74	49	65	30	83	63	91	60	90	72	69	61	67	53	67	49	75	39	69	50	
13	61	27	47	26	69	45	64	28	69	53	92	61	90	71	71	61	75	53	68	43	65	47	65	35	
14	55	41	65	27	78	50	82	50	81	51	91	59	78	69	81	57	77	46	72	39	56	35	70	33	
15	55	45	70	60	80	53	84	60	90	78	84	63	75	67	83	57	80	48	75	43	50	32	58	42	
16	54	38	71	59	67	38	86	51	87	51	90	59	83	66	85	55	78	59	79	45	42	22	48	21	
17	55	25	60	32	54	37	83	50	73	39	87	55	85	60	86	61	73	65	80	53	60	21	59	21	
18	50	26	37	30	43	15	77	62	76	47	85	70	85	65	87	69	82	63	76	59	67	33	60	35	
19	40	26	37	27	48	16	74	40	83	53	82	68	84	67	90	69	87	53	64	41	64	31	70	53	
20	---	18	44	27	50	20	70	39	85	64	81	64	86	67	87	72	84	61	63	30	56	22	67	50	
21	48	28	46	40	50	37	78	42	83	56	88	65	87	65	88	67	84	62	73	36	65	37	65	43	
22	68	35	49	18	52	36	78	62	68	48	88	67	86	63	77	69	83	65	73	35	58	42	78	50	
23	74	35	47	35	60	26	---	---	62	48	90	71	90	63	85	67	72	49	69	32	56	42	75	27	
24	76	42	44	28	58	32	76	52	59	48	92	69	89	67	88	68	73	46	77	43	48	25	39	16	
25	74	49	36	11	60	28	71	35	73	40	90	71	90	71	90	66	76	40	77	50	64	42	53	24	
26	73	44	37	15	74	38	61	40	78	42	86	63	88	70	89	66	77	39	70	39	70	32	50	33	
27	76	56	49	15	65	39	58	50	82	42	79	53	89	69	89	70	82	53	71	34	59	43	48	24	
28	70	36	55	39	71	43	63	40	93	56	80	51	87	71	85	69	85	68	70	44	55	28	54	34	
29	50	32	---	---	70	55	68	33	86	55	79	50	88	72	82	60	85	66	64	27	49	18	59	35	
30	51	23	---	---	65	33	76	39	85	56	79	60	83	69	83	60	75	41	66	29	40	27	46	23	
31	56	22	---	---	70	28	---	---	68	50	---	---	88	65	84	66	---	---	65	31	---	---	45	25	
AV.	57	34	52	31	65	38	77	46	78	52	84	58	86	66	85	65	79	54	74	45	59	33	59	34	
MEAN	45.3	41.3	51.6	61.5	64.7	71.0	76.2	75.3	66.6	59.1	45.9	46.5	46.5	46.5	46.5	46.5	46.5	46.5	46.5	46.5	46.5	46.5	46.5	46.5	
STA AV	52	29	55	32	63	38	74	47	81	55	86	61	89	66	88	65	83	59	73	47	64	38	54	31	

NOTES: TEMPERATURE DATA FROM U.S. WEATHER BUREAU STATION AT LEWISTON. RECORDS BEGAN MARCH 1954.
FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1965, P. 75.1-8.

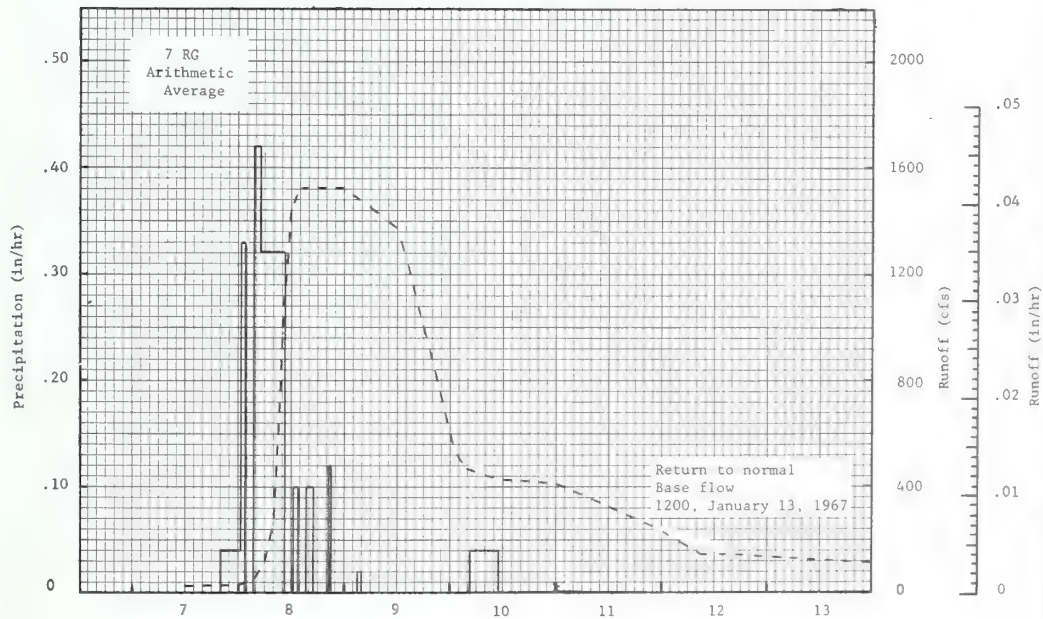
Cooperative Research Project of ARS and SCS of USDA, North Carolina Agricultural Experiment Station,
North Carolina Department of Water and Air Resources, and U. S. Geological Survey.

1967 DAILY PRECIPITATION (inches)						AHOSSKIE, NORTH CAROLINA			WATERSHED W-A1			75.1
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.59
2	.00	.00	.00	.00	.00	.00	.25	.00	.00	.00	.27	.00
3	.00	.00	.00	.00	.09	.00	.15	.00	.00	.00	.00	.97
4	.35	.00	.00	.00	.12	.00	.40	.31	.00	.00	.00	.00
5	.10	.00	.00	.00	.03	.00	.00	.20	.00	.00	.00	.00
6	.00	.17	.00	.00	.00	.00	.00	.11	.00	.00	.00	.00
7	.14	.48	.00	.00	.13	.00	.67	.19	.00	.00	.00	.00
8	2.79	.00	.00	.00	.00	.00	.10	.14	.00	.00	.00	.00
9	.00	1.04	.00	.00	.00	.00	.00	.00	.76	.00	.00	.00
10	.35	.00	.00	.11	.00	.00	.00	.39	1.40	.38	.00	.54
11	.00	.00	.00	.00	.00	.00	.00	1.39	.00	.00	.00	.25
12	.00	.00	.00	.00	.11	.00	.00	.15	.00	.00	.00	.30
13	.00	.00	.00	.00	.00	.00	.79	.11	.00	.00	.00	.00
14	.27	.00	.00	.00	.09	.00	.88	.00	.00	.00	.00	.00
15	.02	.00	.00	.00	.16	.00	.84	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.30	.00	.00	.00	.11	.00	.00	.00
17	.00	.55	.00	.08	.00	.00	.00	.00	.15	.00	.00	.00
18	.00	.34	.00	.00	.00	2.34	.00	.00	.00	.46	.00	.16
19	.21	.00	.00	.00	.00	1.84	.20	.00	.00	.00	.00	.00
20	.12	.37	.00	.00	.00	.00	.00	.98	.00	.00	.00	.00
21	.08	.03	.81	.00	.00	.00	.24	2.08	.13	.00	.18	.00
22	.02	.29	.00	.69	.42	.00	.00	.60	.13	.00	.00	.98
23	.00	.00	.00	.00	.06	.26	.00	1.21	.00	.00	.52	.53
24	.00	.00	.00	.00	.00	.11	.00	.17	.00	.00	.55	.00
25	.00	.00	.00	.10	.00	.50	.11	.01	.00	.57	.00	.00
26	.00	.00	.00	.52	.00	.06	.00	.04	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.20	.00	.00	.26	.00	.00	.02	.05	.00	.00	.51
29	.00	-----	.00	.00	.20	.00	.03	.00	.03	.00	.00	.00
30	.00	-----	.00	.00	.00	.20	.00	.00	.00	.00	.00	.00
31	.00	-----	.00	-----	.44	-----	.01	.00	-----	.00	-----	.18
TOTAL	4.45	3.47	.81	1.50	2.41	5.40	4.67	8.10	2.76	1.41	1.52	4.96
STA AV	3.49	3.75	2.28	1.50	3.49	4.75	4.66	6.02	2.72	1.01	1.17	2.83
NOTES PRECIPITATION VALUES ARE THIESSEN WEIGHTED AVERAGES OF 10 GAGES. STA AV BASED ON 3-YEAR PERIOD (1965-1967).												

1967 MEAN DAILY DISCHARGE (cfs)						AHOSSKIE, NORTH CAROLINA			WATERSHED W-A1			75.1
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	20.0	23.0	67.0	18.0	13.0	8.2	14.0	10.0	31.0	9.6	6.5	20.0
2	18.0	23.0	54.0	17.0	12.0	6.9	12.0	9.1	27.0	9.1	8.2	30.0
3	16.0	23.0	48.0	16.0	11.0	5.7	12.0	8.2	25.0	8.7	7.8	105.0
4	16.0	23.0	42.0	16.0	9.6	5.1	25.0	25.0	21.0	8.2	7.4	60.0
5	23.0	30.0	39.0	15.0	10.0	4.8	27.0	19.0	18.0	8.2	7.4	38.0
6	26.0	38.0	35.0	15.0	9.6	4.8	15.0	11.0	17.0	7.8	6.9	30.0
7	25.0	46.0	32.0	14.0	11.0	4.1	16.0	9.6	15.0	7.8	6.9	25.0
8	895.0	46.0	29.0	13.0	10.0	4.1	37.0	9.1	14.0	7.8	6.9	22.0
9	1,200.0	36.0	27.0	13.0	9.6	3.4	28.0	7.8	13.0	7.8	6.5	19.0
10	441.0	41.0	25.0	13.0	9.2	3.1	17.0	7.4	188.0	8.2	6.5	20.0
11	324.0	86.0	24.0	13.0	8.7	2.8	12.0	52.0	157.0	7.8	6.5	58.0
12	160.0	236.0	22.0	12.0	8.2	2.6	10.0	81.0	85.0	7.8	6.5	142.0
13	120.0	174.0	21.0	12.0	7.8	2.6	47.0	53.0	57.0	7.8	6.9	119.0
14	120.0	113.0	20.0	12.0	8.2	2.6	158.0	43.0	41.0	7.8	6.9	76.0
15	127.0	89.0	20.0	12.0	8.7	2.3	248.0	30.0	30.0	7.8	6.9	58.0
16	93.0	69.0	19.0	12.0	8.7	2.3	264.0	22.0	25.0	7.4	6.9	48.0
17	77.0	64.0	18.0	12.0	8.2	2.1	105.0	20.0	23.0	7.4	6.9	41.0
18	61.0	350.0	18.0	10.0	6.9	12.0	60.0	14.0	23.0	7.8	6.5	36.0
19	58.0	253.0	17.0	8.5	6.4	714.0	45.0	12.0	20.0	9.1	6.5	36.0
20	66.0	152.0	17.0	8.1	6.4	299.0	60.0	20.0	17.0	8.7	6.5	36.0
21	68.0	253.0	27.0	9.6	6.4	81.0	40.0	104.0	16.0	7.8	6.9	32.0
22	78.0	174.0	47.0	11.0	6.9	44.0	30.0	727.0	16.0	6.9	7.4	32.0
23	72.0	220.0	42.0	20.0	8.2	39.0	28.0	855.0	14.0	6.9	12.0	385.0
24	62.0	156.0	36.0	14.0	7.3	32.0	25.0	1,120.0	14.0	6.5	13.0	256.0
25	53.0	98.0	30.0	13.0	6.9	22.0	20.0	760.0	13.0	7.4	20.0	158.0
26	46.0	69.0	27.0	12.0	6.1	38.0	17.0	265.0	12.0	14.0	12.0	118.0
27	41.0	59.0	25.0	18.0	5.7	32.0	14.0	137.0	12.0	12.0	7.5	92.0
28	38.0	64.0	24.0	18.0	5.4	20.0	12.0	98.0	11.0	8.2	6.5	103.0
29	34.0	-----	22.0	16.0	7.8	15.0	12.0	67.0	11.0	7.4	5.5	223.0
30	29.0	-----	20.0	14.0	6.9	17.0	11.0	48.0	10.0	7.4	10.0	143.0
31	25.0	-----	18.0	-----	8.2	-----	11.0	38.0	-----	6.9	-----	103.0
MEAN	143.0	107.0	29.4	13.6	8.4	47.8	46.2	151.0	32.5	8.2	8.0	85.9
INCHES	2.89	1.96	.60	.27	.17	.93	.93	3.05	.64	.17	.16	1.74
NOTES TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .0006525. RUNOFF DATA FURNISHED BY U.S. GEOLOGICAL SURVEY. RECORDS ARE GOOD TO FAIR.												

1967			SELECTED RUNOFF EVENT				AHOSKIE, NORTH CAROLINA			WATERSHED W-A1			75.1	
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF							
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)				
Event of January 7-13, 1967														
1-7	7 RG1/ .00	2/ .0082	1-7	7 RG	AVG1/		1-7	1200	25	.0000				
				2000	.00									
1-8			0030	.04	.19	1-8	2400	29	.0088					
			0130	.33	.52		0400	52	.0132					
			0345	.00	.52	0600	117	.0178						
			0500	.42	1.04	0800	268	.0283						
			1030	.32	2.79	1-9	0900	600	.0401					
			1230	.00	2.79		1200	1440	.1233					
			1330	.10	2.89	1400	1520	.2037						
			1530	.00	2.89	2400	1520	.6169						
			1700	.10	3.04	0600	1470	.8608						
			2030	.00	3.04	1-10	1200	1370	1.0924					
			2045	.12	3.07		1800	900	1.2775					
1-9			0300	.00	3.07	2400	598	1.3997						
1-10			0400	.02	3.09	1-10	0400	473	1.4579					
			0430	.00	3.09		0800	441	1.5077					
			1100	.04	3.42	1-11	1200	430	1.5550					
							1800	430	1.6251					
						2400	410	1.6937						
						1-11	1200	324	1.8134					
						2400	228	1.9034						
						1-12	0600	177	1.9365					
							0900	151	1.9499					
							1800	131	1.9843					
				1-13	2400	3/ 113	2.0043							
Watershed conditions: Approximate land use: 65% in woodland, 30% in row crops, 2% in pasture, 3% misc. (roads, homesites, and urban areas)														

NOTES: TO CONVERT CFS TO IN/HR, MULTIPLY BY .00002719. 1/ PRECIPITATION IS ARITHMETIC AVERAGE OF 7 RAIN GAGES.
2/ RUNOFF PRIOR TO 1200 ON 1-7-67. 3/ NORMAL BASE FLOW.



January 7 - 13, 1967
AHOSKIE, NORTH CAROLINA WATERSHED W-A1

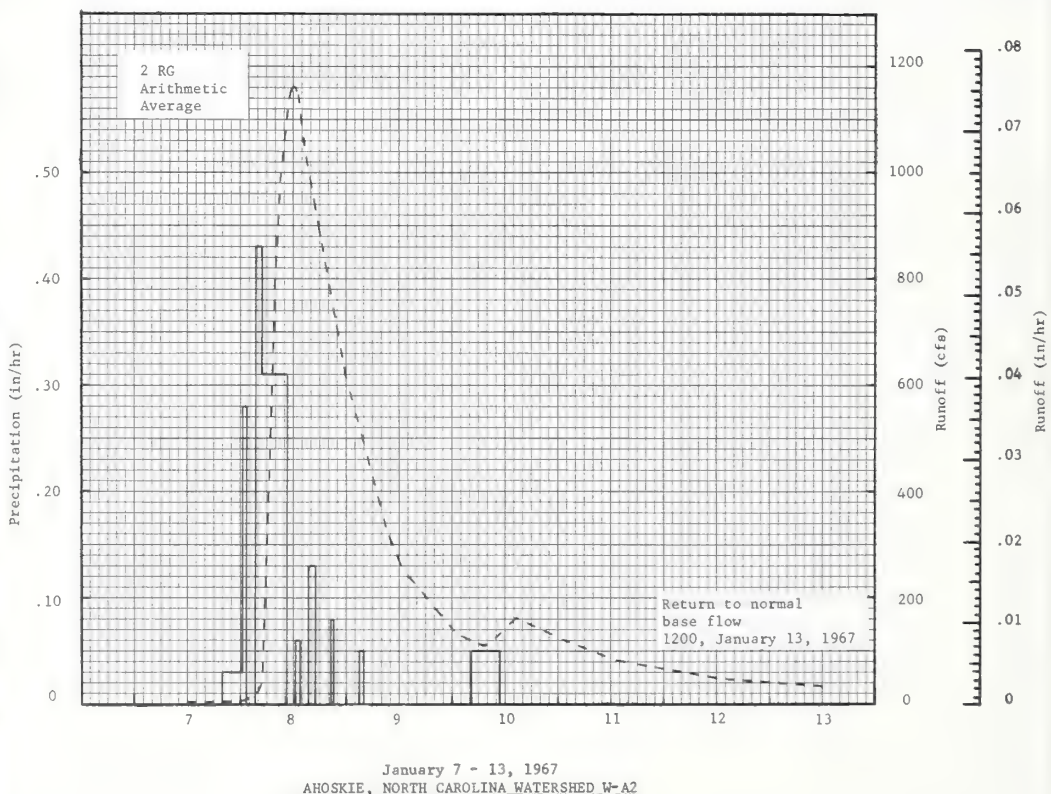
MONTHLY PRECIPITATION AND RUNOFF ^{1/} (inches)						AHOSKIE, NORTH CAROLINA WATERSHED W-A2 AREA—15,360 ACRES (24.0 SQ. MILES)								75.2
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1967	P	4.18	3.37	.81	1.45	2.02	5.53	4.15	7.77	2.58	1.65	1.42	4.95	39.88
	O	2.65	2.04	.48	.21	.14	.52	.44	1.91	.37	.12	.10	1.76	10.74
	STA AVG ^{3/}	3.90	3.63	2.24	1.50	3.21	4.86	4.14	5.91	2.66	1.09	1.23	2.84	36.61
	(65-67) O	1.28	2.45	1.83	.42	.46	.81	.66	1.16	.23	.11	.10	.69	10.20
	MEAN ^{4/}													
58 YR		3.55	3.69	3.65	3.26	3.53	4.86	5.71	4.70	3.98	2.83	2.75	3.36	45.87
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS														
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL											
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	1-8	.07	1-8	.07	1-8	.15	1-8	.43	1-8	.78	1-8	1.23	1-8	1.57
														2.12
MAXIMUMS FOR PERIOD OF RECORD														
1964 TO	10-5		10-5		10-5		10-5		10-5		10-5		10-4	10-3
1967	1964	.08	1964	.08	1964	.17	1964	.50	1964	.97	1964	1.64	1964	2.37
														3.06
Notes: Watershed conditions: Woodland, 75%; row crops, 22%; pasture, 2%; roads and homesites, 1%. 1/ Precipitation Thiessen weighted using 5 gages. 2/ Runoff data furnished by U.S. Geological Survey. 3/ STA AV computed from rainfall and runoff records for period 1965-67. 4/ Mean P based on 58-yr (1910-1967) U.S. Weather Bureau record period at Scotland Neck, N.C. Missing records for Oct. 1920, May 1945, Jan. and May 1949, Jan., Feb., and Mar. 1950, and Nov. 1951 estimated from nearby station.														
1967 DAILY PRECIPITATION (inches)						AHOSKIE, NORTH CAROLINA WATERSHED W-A2								75.2
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC		
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.58	
2	.00	.00	.00	.00	.00	.00	.21	.00	.00	.00	.24	.00	.00	
3	.00	.00	.00	.00	.06	.00	.19	.00	.00	.00	.00	.95	.00	
4	.36	.00	.00	.00	.14	.00	.26	.00	.00	.00	.00	.00	.00	
5	.09	.00	.00	.00	.00	.00	.00	.16	.00	.00	.00	.00	.00	
6	.00	.15	.00	.00	.00	.00	.00	.09	.00	.00	.00	.00	.00	
7	.12	.47	.00	.00	.08	.00	.45	.23	.00	.00	.00	.00	.00	
8	2.56	.00	.00	.00	.00	.00	.12	.17	.00	.00	.00	.00	.00	
9	.00	1.04	.00	.00	.00	.00	.00	.00	.76	.00	.00	.00	.00	
10	.33	.00	.00	.12	.00	.00	.00	.42	1.20	.55	.00	.53	.00	
11	.00	.00	.00	.00	.00	.00	.00	1.28	.00	.00	.00	.28	.00	
12	.00	.00	.00	.00	.08	.00	.00	.13	.00	.00	.00	.28	.00	
13	.00	.00	.00	.00	.00	.00	.81	.11	.00	.00	.00	.00	.00	
14	.30	.00	.00	.00	.07	.00	.77	.00	.00	.00	.00	.00	.00	
15	.01	.00	.00	.00	.17	.00	.74	.00	.00	.00	.00	.00	.00	
16	.00	.00	.00	.00	.27	.00	.00	.00	.00	.00	.00	.00	.00	
17	.00	.50	.00	.08	.00	.00	.00	.00	.19	.00	.00	.00	.00	
18	.00	.36	.00	.00	.00	2.62	.00	.00	.00	.51	.00	.16	.00	
19	.09	.00	.00	.00	.00	1.81	.28	.00	.00	.00	.00	.00	.00	
20	.12	.36	.00	.00	.00	.00	.00	1.17	.00	.00	.00	.00	.00	
21	.17	.05	.81	.00	.00	.00	.19	1.83	.09	.00	.19	.00	.00	
22	.03	.29	.00	.60	.43	.00	.00	.51	.14	.00	.00	.96	.00	
23	.00	.00	.00	.00	.04	.17	.00	1.36	.00	.00	.46	.50	.00	
24	.00	.00	.00	.00	.00	.20	.00	.24	.00	.00	.53	.00	.00	
25	.00	.00	.00	.10	.00	.60	.13	.01	.00	.59	.00	.00	.00	
26	.00	.00	.00	.55	.00	.00	.00	.00	.00	.00	.00	.00	.00	
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
28	.00	.15	.00	.00	.07	.00	.00	.06	.04	.00	.00	.53	.00	
29	.00	----	.00	.00	.20	.00	.00	.00	.08	.00	.00	.00	.00	
30	.00	----	.00	.00	.00	.13	.00	.00	.00	.00	.00	.00	.00	
31	.00	----	.00	----	.41	----	.00	.00	----	.00	----	.18	.00	
TOTAL	4.18	3.37	.81	1.45	2.02	5.53	4.15	7.77	2.58	1.65	1.42	4.95		
STA AV	3.30	3.63	2.24	1.50	3.21	4.86	4.14	5.91	2.66	1.09	1.23	2.84		
NOTES: PRECIPITATION VALUES ARE THIESSEN WEIGHTED AVERAGES OF 5 GAGES. STA AV BASED ON 3-YEAR PERIOD (1965-1967). FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1965, P. 75.1-8.														

Cooperative Research Project of ARS and SCS of USDA, North Carolina Agricultural Experiment Station,
North Carolina Department of Water and Air Resources, and U. S. Geological Survey.

1967 MEAN DAILY DISCHARGE (cfs)						AHOSKIE, NORTH CAROLINA WATERSHED W-A2 75.2						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	6.1	7.0	26.0	5.0	4.4	2.2	3.9	3.0	8.0	2.7	1.7	7.0
2	5.6	6.8	21.0	5.0	4.2	2.1	3.2	2.7	6.9	2.7	1.7	8.0
3	4.6	6.3	18.0	5.7	4.0	2.1	4.6	2.6	6.5	2.7	1.8	60.0
4	5.6	5.9	15.0	5.1	3.5	1.8	7.2	2.5	5.8	2.5	1.7	30.0
5	11.0	5.4	13.0	4.9	3.5	1.8	6.1	2.5	5.2	2.4	1.7	13.0
6	7.9	5.4	11.0	4.8	3.5	1.7	3.6	2.7	4.7	2.4	1.7	9.8
7	6.1	20.0	11.0	4.6	3.7	1.7	3.3	2.5	4.1	2.4	1.7	7.9
8	664.0	18.0	9.1	4.4	3.4	1.7	5.9	2.8	3.9	2.4	1.7	6.8
9	298.0	14.0	8.3	4.0	3.2	1.7	5.2	2.6	4.0	2.4	1.7	6.0
10	137.0	20.0	7.0	4.0	2.9	1.5	3.9	2.4	48.0	2.5	1.7	9.2
11	89.0	72.0	6.8	4.0	2.9	1.6	3.2	17.0	29.0	2.8	1.6	35.0
12	51.0	103.0	6.5	3.7	2.9	1.6	3.0	11.0	17.0	2.4	1.6	77.0
13	36.0	72.0	5.9	3.7	2.8	1.5	10.0	8.0	12.0	2.3	1.6	44.0
14	45.0	50.0	5.7	3.5	2.8	1.7	24.0	6.7	9.2	2.2	1.6	29.0
15	50.0	39.0	5.4	3.5	2.8	1.2	44.0	4.7	7.2	2.2	1.6	21.0
16	34.0	30.0	4.8	3.5	3.5	1.5	42.0	3.7	6.1	2.2	1.6	17.0
17	24.0	26.0	4.6	3.4	2.8	1.5	20.0	3.3	6.8	2.3	1.6	14.0
18	20.0	168.0	4.1	3.5	2.6	17.0	11.0	3.1	6.7	3.2	1.7	12.0
19	19.0	97.0	3.9	3.2	2.6	190.0	12.0	3.0	5.4	3.1	1.8	14.0
20	20.0	72.0	3.9	3.0	2.6	25.0	12.0	6.6	4.7	2.4	1.8	13.0
21	24.0	128.0	11.0	3.0	2.6	13.0	7.3	67.0	4.2	2.4	1.9	11.0
22	30.0	67.0	22.0	5.4	2.4	7.5	8.0	182.0	4.7	2.4	2.1	13.0
23	24.0	109.0	16.0	4.8	3.0	5.7	5.9	330.0	4.0	2.3	3.1	199.0
24	20.0	64.0	13.0	4.6	2.4	5.7	4.7	335.0	3.7	2.3	3.5	94.0
25	17.0	37.0	11.0	3.9	2.4	5.1	4.3	106.0	3.3	4.0	8.4	59.0
26	14.0	26.0	9.1	4.9	2.4	16.0	5.5	44.0	3.2	5.0	3.6	44.0
27	13.0	21.0	8.1	9.8	2.3	6.9	3.9	25.0	3.2	2.1	2.2	34.0
28	11.0	28.0	7.3	6.2	2.3	4.8	3.6	18.0	3.1	1.9	2.1	56.0
29	9.4	----	7.0	5.1	2.3	3.9	3.3	14.0	3.4	1.9	1.9	97.0
30	8.3	-----	6.3	4.8	2.0	3.7	3.2	11.0	3.0	1.7	4.0	57.0
31	7.3	-----	6.1	-----	3.1	-----	3.0	9.1	-----	1.7	-----	41.0
MEAN	55.2	47.1	9.9	4.5	3.0	11.1	9.1	39.8	7.9	2.5	2.2	36.7
INCHES	2.65	2.04	.48	.21	.14	.52	.44	1.91	.37	.12	.10	1.76
NOTES: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .0015496. RUNOFF DATA FURNISHED BY U.S. GEOLOGICAL SURVEY. RECORDS ARE GOOD.												

1967 SELECTED RUNOFF EVENT			AHOSKIE, NORTH CAROLINA				WATERSHED W-A2				75.2
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in./hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)	
Event of January 7-13, 1967											
1-7	2 RG ^{1/} .00	2/ .0050	1-7	2 RG 2000	AVG1/ .00	.00	1-7	1200	6	.0000	
			1-8	0030	.03	.13		1800	5	.0023	
				0130	.28	.41		2400	6	.0045	
			0345	.00	.41	1-8	0300	11	.0062		
			0500	.43	.95		0500	44	.0097		
			1030	.31	2.67		0800	748	.0865		
			1230	.00	2.67		0900	968	.1419		
			1330	.06	2.73	1100	1130	.2773			
			1530	.00	2.73	1200	1160	.3513			
			1700	.13	2.92	1300	1160	.4261			
1-9	2030	.00	2.92	1-9	1500	1030	.5675				
	2045	.08	2.94		2400	617	1.0461				
	0300	.00	2.94		0900	326	1.3201				
1-10	0400	.05	2.99		1200	267	1.3775				
	0430	.00	2.99		2400	142	1.5359				
				1100	.05	3.29	1-10	0300	124	1.5617	
								0730	111	1.5959	
								1100	132	1.6233	
								1430	161	1.6564	
								2400	124	1.7438	
							1-11	1200	86	1.8251	
							1-12	1200	49	1.9300	
							1-13	1200	3/ 35	1.9961	

NOTES: TO CONVERT CFS TO IN/HR MULTIPLY BY .00006457. 1/ PRECIPITATION IS ARITHMETIC AVERAGE 2 RAIN GAGES.
 2/ RUNOFF PRIOR TO 1200 ON 1-7-67. 3/ NORMAL BASE FLOW.



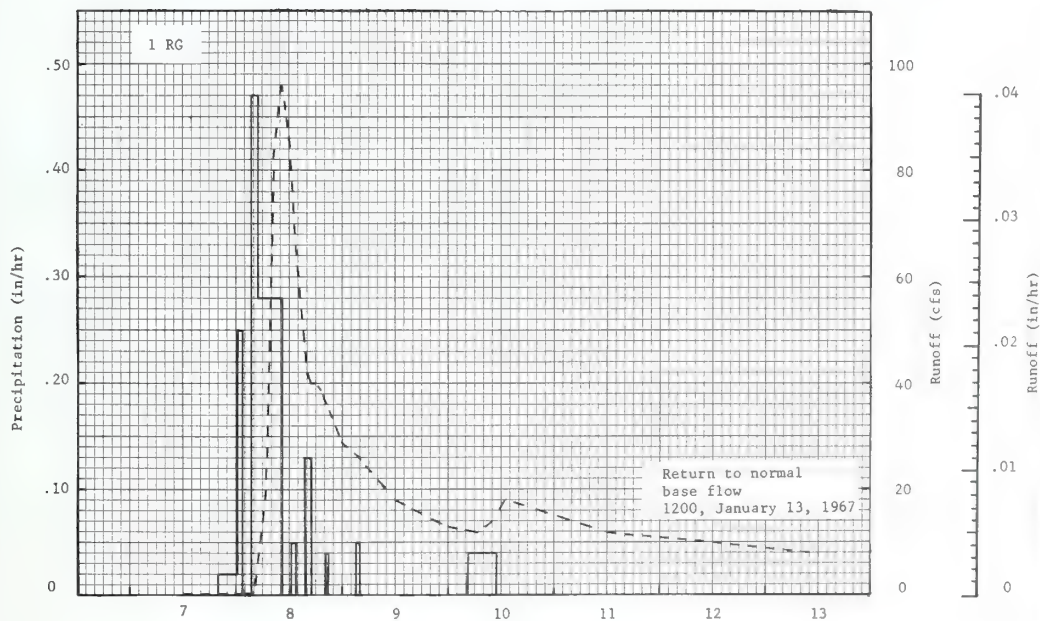
MONTHLY PRECIPITATION AND RUNOFF (inches)						AHOSKIE, NORTH CAROLINA WATERSHED W-A3 AREA—2,368 ACRES (3.70 SQ. MILES)								75.3		
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	P	4.22	3.72	.86	1.50	2.31	4.54	3.63	8.40	2.48	1.84	1.59	5.08	40.22		
	Q	.89	1.52	.27	.03	.02	.10	.06	1.15	.01	.02	.02	1.28	5.37		
STA AVG (65-67)	3/ P	3.57	3.78	2.33	1.65	3.30	5.00	3.46	6.13	2.54	1.21	1.31	2.97	37.25		
	Q	.50	1.76	1.18	.16	.56	.28	.16	.61	.08	.05	.03	.47	5.84		
MEAN 58 YR—	4/ P	3.55	3.69	3.65	3.26	3.53	4.86	5.71	4.70	3.98	2.83	2.75	3.36	45.87		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	8-23	.03	8-23	.03	8-23	.05	8-23	.14	8-23	.23	8-23	.36	8-22	.61	8-20	1.10
MAXIMUMS FOR PERIOD OF RECORD																
1964 TO	10-5		10-5		10-5		10-5		10-5		10-5		10-4		10-4	
1967	1964	.12	1964	.12	1964	.24	1964	.67	1964	1.24	1964	1.88	1964	2.57	1964	3.49
Notes: Watershed conditions: Woodland, 88%; row crops, 10%; homesites, pasture, and roads, 27. 1/ Precipitation Thiessen weighted using 2 gages. 2/ Runoff data furnished by U.S. Geological Survey. 3/ STA AVG computed from rain-fall and runoff record for period 1965-1967. 4/ Mean P based on 58-yr (1910-1967) U.S. Weather Bureau record period at Scotland Neck, N.C. Missing records for Oct. 1920, May 1954, Jan. and May 1949, Jan., Feb., and Mar. 1950, and Nov. 1951 estimated from nearby station.																
1967 DAILY PRECIPITATION (inches)						AHOSKIE, NORTH CAROLINA WATERSHED W-A3								75.3		
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC				
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.62				
2	.00	.00	.00	.00	.00	.00	.07	.00	.00	.00	.25	.00				
3	.00	.00	.00	.00	.00	.00	.22	.00	.00	.00	.00	.74				
4	.35	.00	.00	.00	.16	.00	.12	.00	.00	.00	.00	.00				
5	.10	.00	.00	.00	.00	.00	.00	.17	.00	.00	.00	.00				
6	.00	.20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00				
7	.12	.52	.00	.00	.13	.00	.56	.31	.00	.00	.00	.00				
8	2.60	.00	.00	.00	.00	.00	.15	.21	.00	.00	.00	.00				
9	.00	1.13	.00	.00	.00	.00	.00	.00	.69	.00	.00	.00				
10	.31	.00	.00	.10	.00	.00	.00	.67	.97	.68	.00	.63				
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00				
11	.00	.00	.00	.00	.00	.00	.00	1.17	.00	.00	.00	.34				
12	.00	.00	.00	.00	.00	.00	.00	.12	.00	.00	.00	.34				
13	.00	.00	.00	.00	.00	.00	.87	.10	.00	.00	.00	.00				
14	.33	.00	.00	.00	.10	.00	.52	.00	.00	.00	.00	.00				
15	.00	.00	.00	.00	.16	.00	.53	.00	.00	.00	.00	.00				
16	.00	.00	.00	.00	.37	.00	.00	.07	.00	.00	.00	.00				
17	.00	.60	.00	.10	.00	.00	.00	.19	.00	.00	.00	.00				
18	.00	.35	.00	.00	.00	1.80	.00	.00	.00	.58	.00	.18				
19	.19	.00	.00	.00	.00	1.84	.25	.00	.00	.00	.00	.00				
20	.09	.37	.00	.00	.00	.00	.00	1.74	.00	.00	.00	.00				
21	.10	.03	.86	.00	.00	.00	.39	1.88	.15	.00	.18	.00				
22	.03	.33	.00	.55	.51	.00	.00	.44	.15	.00	.00	1.07				
23	.00	.00	.00	.00	.03	.06	.00	1.02	.00	.00	.53	.44				
24	.00	.00	.00	.00	.00	.19	.00	.45	.00	.00	.63	.00				
25	.00	.00	.00	.12	.00	.53	.00	.07	.00	.58	.00	.00				
26	.00	.00	.00	.63	.00	.00	.00	.00	.00	.00	.00	.00				
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00				
28	.00	.19	.00	.00	.07	.00	.00	.05	.01	.00	.00	.58				
29	.00	-----	.00	.00	.22	.00	.00	.00	.25	.00	.00	.00				
30	.00	-----	.00	.00	.00	.12	.00	.00	.00	.00	.00	.00				
31	.00	-----	.00	-----	.56	-----	.00	.00	-----	.00	-----	.14				
TOTAL	4.22	3.72	.86	1.50	2.31	4.54	3.68	8.40	2.48	1.84	1.59	5.08				
STA AV	3.57	3.78	2.33	1.65	3.30	5.00	3.46	6.13	2.54	1.21	1.31	2.97				
NOTES: PRECIPITATION VALUES ARE THIESSEN WEIGHTED AVERAGES OF 2 GAGES. STA AV BASED ON 3-YEAR PERIOD (1965-1967). FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1965. P. 75.1-8.																

1967 MEAN DAILY DISCHARGE (cfs)						AHOSKIE, NORTH CAROLINA							75.3
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	
1	.10	.40	3.50	.30	.10	.05	.05	.05	.00	.00	.00	.50	
2	.05	.40	2.50	.30	.10	.05	.05	.05	.00	.00	.05	.30	
3	.05	.40	2.00	.20	.10	.05	.05	.05	.00	.00	.10	1.60	
4	.10	.30	1.80	.20	.10	.00	.05	.05	.00	.00	.05	1.00	
5	.30	.30	1.30	.20	.10	.00	.05	.05	.00	.00	.00	.60	
6	.10	.30	1.10	.20	.05	.00	.05	.05	.00	.00	.00	.50	
7	.05	1.60	1.00	.10	.10	.00	.05	.05	.00	.00	.00	.40	
8	25.00	1.10	.80	.10	.05	.00	.10	.20	.00	.00	.00	.40	
9	9.40	1.20	.70	.10	.05	.00	.05	.10	.00	.00	.00	.40	
10	7.50	1.80	.60	.10	.05	.00	.05	.10	.70	.10	.00	.80	
11	6.00	4.20	.50	.10	.05	.00	.05	2.20	.20	.20	.00	1.90	
12	4.10	8.50	.40	.05	.05	.00	.05	.40	.00	.00	.00	5.80	
13	3.40	7.80	.40	.05	.05	.00	.60	.40	.00	.00	.00	2.90	
14	4.10	6.40	.40	.05	.05	.00	.70	.20	.00	.00	.00	1.80	
15	4.50	5.40	.30	.05	.05	.00	1.20	.20	.00	.00	.00	1.40	
16	3.10	4.20	.30	.05	.05	.00	.80	.10	.00	.00	.00	1.20	
17	2.20	3.80	.20	.05	.05	.00	.20	.10	.00	.00	.00	1.00	
18	1.70	18.00	.20	.05	.05	.10	.10	.10	.00	.40	.00	.90	
19	1.40	12.00	.20	.05	.05	7.90	.10	.10	.00	.20	.00	1.00	
20	1.40	9.60	.20	.05	.05	.60	.20	2.10	.00	.00	.00	1.00	
21	1.80	15.00	1.00	.05	.05	.20	.10	17.00	.00	.00	.05	.90	
22	2.30	10.00	1.80	.10	.05	.10	.20	25.00	.00	.00	.05	1.40	
23	1.90	13.00	1.20	.05	.05	.05	.10	36.00	.00	.00	.30	22.00	
24	1.70	9.30	1.00	.10	.00	.05	.10	18.00	.00	.00	.30	12.00	
25	1.30	5.50	.80	.05	.00	.05	.10	7.70	.00	.20	.40	9.50	
26	1.10	3.90	.70	.10	.00	.20	.10	2.40	.00	.30	.20	7.60	
27	1.00	2.90	.60	.20	.00	.05	.05	.80	.00	.05	.05	5.80	
28	.80	4.20	.50	.10	.00	.05	.05	.30	.00	.05	.20	9.50	
29	.70	-----	.40	.10	.00	.05	.05	.10	.00	.00	.20	15.00	
30	.60	-----	.40	.10	.00	.05	.10	.05	.00	.00	.40	11.00	
31	.50	-----	.30	-----	.05	-----	.05	.00	-----	.00	-----	7.70	
MEAN	2.85	5.41	.87	.11	.05	.32	.18	3.68	.03	.05	.08	4.12	
INCHES	.89	1.52	.27	.03	.02	.10	.06	1.15	.01	.02	.02	1.28	

NOTES: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .0100514. RUNOFF DATA FURNISHED BY U.S. GEOLOGICAL SURVEY. RECORDS ARE GOOD TO FAIR.

1967 SELECTED RUNOFF EVENT			AHOSKIE, NORTH CAROLINA				WATERSHED W-A3			75.3
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)
Event of January 7-13, 1967										
1-7	1 RG .00	1/.0030	1-7	2000	.00	.00	1-7	1200	.6	.0000
			1-8	0030	.02	.10		2230	.7	.0029
				0130	.25	.35	1-8	0030	.9	.0035
				0345	.00	.35		0400	1.5	.0053
				0500	.47	.94		0630	19.0	.0160
Watershed conditions: Approximate land use: 88% in woodland, 10% in row crops, 2% misc. (homesites, pastures, and roads)				1030	.28	2.50		0830	80.0	.0575
				1230	.00	2.50		1030	96.0	.1312
				1330	.05	2.55		1200	86.0	.1883
				1530	.00	2.55		1330	66.0	.2361
				1700	.13	2.74		1600	42.0	.2926
				2030	.00	2.74		1700	40.0	.3098
				2045	.04	2.75		1800	40.0	.3265
			1-9	0300	.00	2.75		1900	39.0	.3431
				0400	.05	2.80		2400	29.0	.4143
			1-10	0430	.00	2.80	1-9	0400	26.0	.4604
				1100	.04	3.09		1200	18.0	.5341
								2400	13.0	.6119
							1-10	0700	12.0	.6486
								1000	14.0	.6649
								1300	18.0	.6850
							1-11	1200	12.0	.8295
							1-12	1200	10.0	.9400
							1-13	1200	2/ 8.0	1.0305

NOTES: TO CONVERT CFS TO IN/HR. MULTIPLY BY .00041881. 1/RUNOFF PRIOR TO 1200 ON 1-7-67. 2/NORMAL BASE FLOW.



January 7 - 13, 1967
AHOSKIE, NORTH CAROLINA WATERSHED W-A3

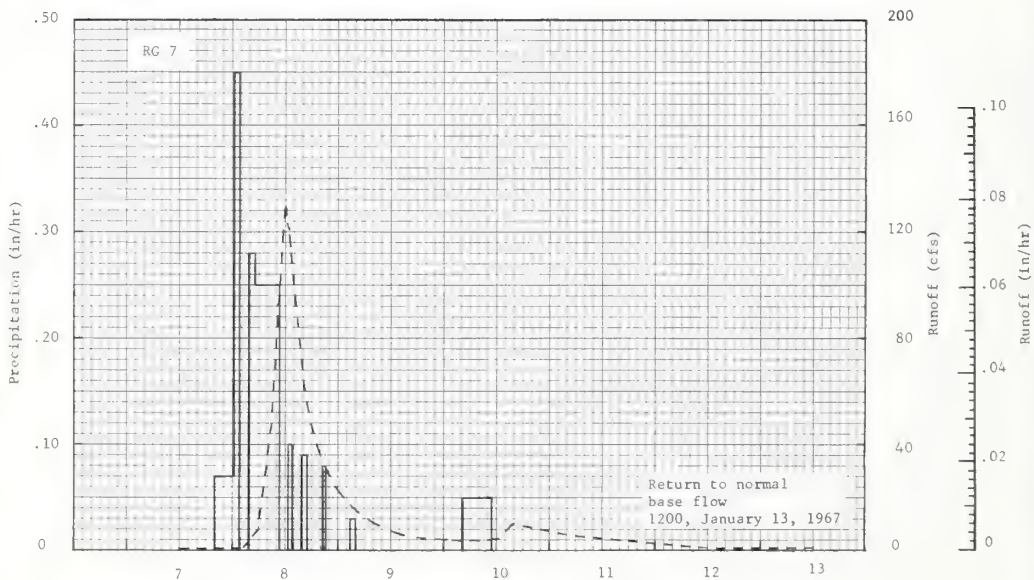
1/2 MONTHLY PRECIPITATION AND RUNOFF (inches)						AHOSKIE, NORTH CAROLINA WATERSHED W-A4 AREA—1,664 ACRES (2.60 SQ.MILES)								75.4		
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967	4.48	3.68	.88	2.17	3.16	3.94	5.30	9.92	2.96	.92	1.82	4.79	44.02			
Q	1.28	1.01	.24	.11	.06	.07	.61	4.29	.47	.06	.11	.86	9.17			
3/ STA AVG P (65-67)	3.56	3.78	2.35	1.73	4.05	3.97	4.50	6.69	3.04	.84	1.09	2.84	38.44			
Q	.63	1.59	1.17	.18	.57	.27	.34	1.65	.23	.06	.06	.33	7.08			
MEAN 58 YR	3.55	3.69	3.65	3.26	3.53	4.86	5.71	4.70	3.98	2.83	2.75	3.36	45.87			
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	8-22	.11	8-22	.11	8-22	.22	8-21	.54	8-21	.76	8-23	.92	8-23	1.64	8-21	3.48
MAXIMUMS FOR PERIOD OF RECORD																
1964 TO 1967	5-30 1966	.16	5-30 1966	.16	5-30 1966	.32	5-29 1966	.82	5-29 1966	1.01	10-5 1964	1.28	8-23 1967	1.64	8-21 1967	3.48
Notes: Watershed conditions: Woodland, 60%; row crops, 39%; homesites, pasture, and roads, 1%. 1/ Precipitation Thiessen weighted using 2 gages. 2/ Runoff data furnished by U.S. Geological Survey. 3/ STA AVG computed from rainfall and runoff records for period 1965-1967. 4/ Mean P based on 58-yr (1910-1967) U.S. Weather Bureau record period at Scotland Neck, N.C. Missing records for Oct. 1920, May 1945, Jan. and May 1949, Jan., Feb., and Mar. 1950, and Nov. 1951 estimated from nearby station.																
1967 DAILY PRECIPITATION (inches)						AHOSKIE, NORTH CAROLINA WATERSHED W-A4								75.4		
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC				
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.63				
2	.00	.00	.00	.00	.00	.00	.19	.00	.00	.00	.41	.00				
3	.00	.00	.00	.00	.21	.00	.10	.00	.00	.00	.00	.86				
4	.27	.00	.00	.00	.10	.00	.56	1.76	.00	.00	.00	.00				
5	.14	.00	.00	.00	.05	.00	.00	.21	.00	.00	.00	.00				
6	.00	.20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00				
7	.20	.55	.00	.00	.35	.00	1.01	.23	.00	.00	.00	.00				
8	2.70	.00	.00	.00	.00	.00	.06	.00	.00	.00	.00	.00				
9	.00	1.04	.00	.00	.00	.00	.00	.00	.56	.00	.00	.00				
10	.36	.00	.00	.10	.00	.00	.00	.59	1.61	.32	.00	.50				
11	.00	.00	.00	.00	.00	.00	.00	1.51	.00	.00	.00	.17				
12	.00	.00	.00	.00	.17	.00	.00	.14	.00	.00	.00	.31				
13	.00	.00	.00	.00	.00	.00	.63	.12	.00	.00	.00	.00				
14	.29	.00	.00	.00	.14	.00	.80	.00	.00	.00	.00	.00				
15	.02	.00	.00	.00	.12	.00	.69	.00	.00	.00	.00	.00				
16	.00	.00	.00	.00	.37	.00	.00	.00	.14	.00	.00	.00				
17	.00	.57	.00	.10	.00	.00	.00	.00	.16	.00	.00	.00				
18	.00	.33	.00	.00	.00	1.42	.00	.00	.00	.37	.00	.16				
19	.39	.00	.00	.00	.00	1.26	.41	.00	.00	.00	.00	.00				
20	.11	.37	.00	.00	.00	.00	.00	1.22	.00	.00	.00	.00				
21	.00	.02	.88	.00	.00	.00	.52	2.08	.19	.00	.14	.00				
22	.00	.35	.00	1.34	.45	.00	.00	.64	.11	.00	.00	.86				
23	.00	.00	.00	.00	.09	.30	.00	1.02	.00	.00	.62	.62				
24	.00	.00	.00	.00	.00	.04	.00	.18	.00	.00	.65	.00				
25	.00	.00	.00	.13	.00	.43	.17	.00	.00	.23	.00	.00				
26	.00	.00	.00	.50	.00	.13	.00	.22	.00	.00	.00	.00				
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00				
28	.00	.25	.00	.00	.37	.00	.00	.00	.19	.00	.00	.49				
29	.00	-----	.00	.00	.26	.00	.05	.00	.00	.00	.00	.00				
30	.00	-----	.00	.00	.00	.36	.00	.00	.00	.00	.00	.00				
31	.00	-----	.00	-----	.48	-----	.11	.00	-----	.00	-----	.19				
MEAN	4.48	3.68	.88	2.17	3.16	3.94	5.30	9.92	2.96	.92	1.82	4.79				
INCHES	3.56	3.78	2.35	1.73	4.05	3.97	4.50	6.69	3.04	.84	1.09	2.84				
NOTES: PRECIPITATION VALUES ARE THIESSEN WEIGHTED AVERAGES OF 2 GAGES. STA AV BASED ON 3-YEAR PERIOD (1965-1967). FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1965, P. 75.1-8.																

MEAN DAILY DISCHARGE (cfs)						AHOSKIE, NORTH CAROLINA						
1967						WATERSHED W-A4						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.20	.20	1.20	.30	.20	.10	.20	.10	.60	.10	.10	.50
2	.20	.20	.90	.30	.20	.10	.10	.10	.50	.10	.20	.40
3	.10	.20	.80	.30	.20	.10	.10	.10	.40	.10	.20	1.80
4	.20	.10	.80	.20	.20	.10	1.60	7.60	.40	.10	.20	1.70
5	.30	.10	.60	.20	.20	.10	.40	5.40	.40	.10	.20	.90
6	.20	.10	.50	.20	.20	.10	.20	.80	.40	.20	.20	.60
7	.20	2.00	.50	.20	.40	.10	2.50	.40	.40	.20	.20	.50
8	52.00	1.00	.50	.20	.20	.10	2.20	.40	.40	.10	.20	.50
9	6.40	.60	.40	.20	.20	.10	.50	.30	.40	.10	.20	.40
10	7.60	1.00	.40	.20	.10	.10	.30	.20	18.00	.10	.20	.60
11	3.20	6.90	.40	.20	.10	.10	.20	22.00	3.70	.10	.20	1.70
12	1.60	7.60	.40	.20	.10	.10	.10	5.70	1.50	.10	.20	3.30
13	1.10	3.40	.40	.20	.10	.10	1.80	3.00	.70	.10	.20	1.90
14	2.60	2.20	.40	.20	.10	.10	14.00	1.60	.40	.10	.20	1.10
15	2.10	1.70	.40	.20	.10	.10	6.30	.70	.40	.10	.20	.80
16	1.20	1.20	.30	.10	.10	.20	3.20	.40	.30	.10	.20	.70
17	.70	1.10	.30	.10	.10	.20	.60	.40	.40	.10	.20	.60
18	.40	11.00	.30	.10	.10	.30	.20	.30	.40	.10	.20	.50
19	.60	3.90	.30	.10	.10	.70	1.60	.30	.30	.10	.20	.60
20	1.00	2.40	.30	.10	.10	.20	.70	2.90	.30	.10	.20	.60
21	1.40	7.00	1.20	.10	.10	.10	3.90	41.00	.30	.10	.30	.60
22	1.70	2.70	1.40	.80	.20	.10	.80	50.00	.30	.10	.30	.90
23	1.20	6.30	.80	.60	.20	.20	.30	64.00	.30	.10	.50	20.00
24	.90	3.00	.60	.30	.10	.20	.20	51.00	.30	.10	.40	4.10
25	.60	1.60	.50	.20	.10	.20	.10	16.00	.30	.10	.60	1.90
26	.40	1.00	.40	.30	.10	.40	.10	6.10	.20	.20	.40	1.40
27	.40	.90	.40	.50	.10	.20	.10	7.50	.20	.20	.30	1.00
28	.40	1.50	.40	.40	.10	.10	.10	7.60	.20	.20	.30	2.60
29	.30	-----	.40	.30	.10	.10	.10	1.90	.20	.20	.30	4.80
30	.20	-----	.30	.30	.10	.30	.10	1.10	.20	.20	.50	1.90
31	.20	-----	.30	-----	.20	-----	.10	.80	-----	.20	-----	1.30
MEAN	2.89	2.53	.54	.25	.15	.17	1.38	9.67	1.09	.13	.26	1.94
NCHES	1.28	1.01	.24	.11	.06	.07	.61	4.29	.47	.06	.11	.86

NOTES TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .0143039. RUNOFF DATA FURNISHED BY U.S. GEOLOGICAL SURVEY. RECORDS ARE GOOD.

1967 SELECTED RUNOFF EVENT			AHOSKIE, NORTH CAROLINA				WATERSHED W-A4				75.4
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in./hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)	
Event of January 7-13, 1967											
1-7	RG 7 .00	1/ .0014	1-7	RG 2000	.00	.00	1-7	1200	.2	.0000	
			1-8	0030	.07	.30		2300	.2	.0011	
				0130	.45	.75		2400	.5	.0012	
				0345	.00	.75	1-8	0300	2.0	.0030	
				0500	.28	1.10		0600	8.6	.0123	
				1030	.25	2.50		0900	50.0	.0645	
				1230	.00	2.50		1130	126.0	.1952	
				1330	.10	2.60		1200	130.0	.2333	
				1530	.00	2.60		1230	126.0	.2714	
				1700	.09	2.74		1500	84.0	.4276	
				2030	.00	2.74		1730	47.0	.5251	
				2045	.08	2.76		2300	25.6	.6439	
			1-9	0300	.00	2.76	1-9	0800	11.4	.7420	
				0400	.03	2.79		2200	5.2	.8092	
			1-10	0430	.00	2.79	1-10	0600	4.0	.8300	
				1100	.05	3.10		0900	4.0	.8369	
								1230	5.5	.8463	
								1530	10.1	.8601	
								1700	10.9	.8694	
							1-11	0500	6.0	.9282	
								1200	4.5	.9492	
							1-12	1200	1.1	.9876	
							1-13	1200	2/ 1.4	1.0044	

NOTES: TO CONVERT CFS TO IN/HR, MULTIPLY BY .00059599. 1/ RUNOFF PRIOR TO 1200 ON 1-7-67. 2/ NORMAL BASE FLOW.



January 7 - 13, 1967
AHOSKIE, NORTH CAROLINA WATERSHED W-A4

